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THE VISIT OF INTERNATIONAL SPINNERS TO THE SOUTH.

Letters from the center of the English textile trade, supplemented by newspaper utterances from the same quarter, published on another page of this issue of the Manufacturers' Record, reveal a feeling of deep, practical interest on the other side of the water in the plan for a visit of representatives of the textile industry of the world to the South. These expressions, written ten days or two weeks ago, indicate that the only thing necessary to insure hearty support of the plan by the world-spinners is an invitation from representative American bodies. Since they were framed invitations have been sent from the body of Southern bankers gathered in New York and from such representative organizations as the Alabama Commercial and Industrial Association and the Southern Cotton-Growers' Convention in St. Louis, while communications to the Manufacturers' Record show that governors of Southern States and business organizations in cities as far removed as Danville, Savannah and New Orleans are anxious to welcome the visitors. Mr. Edward Atkinson of Boston, who has manifested such a lively interest in the proposition, is convinced that nothing more remains to be done than to receive the visitors and carry them through the South. There are, however, a number of details to be arranged now that the foreigners have been assured of a hearty and representative welcome to the hospitality of the South, enabling them to come face to face under the most favorable auspices with conditions of vital importance to them.

The Standard Pressed Steel Co., Philadelphia, Pa., writes the Manufacturers'

Record that it has found it a valuable advertising medium, and in referring to the Daily Bulletin says:

At the same time we want to express our appreciation for the Daily Bulletin, which we receive regularly every day in our morning's mail, and to which we can trace considerable business.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 56 and 57.

LETTING ONE'S LIGHT SHINE.

In an address last week before the Alabama Commercial and Industrial Association Acting Governor Cunningham made a strong speech in advocacy of immigration of honest, patriotic, law-abiding, industrious and capable persons to Alabama from Northern States or from European countries, and set forth definite facts why such a movement should be encouraged by the State. He contended that natural economics will ultimately bring to the South men from all countries to avail themselves of its natural resources, especially in the culture of cotton. But he said that there was need for a hastening of this end, and that therefore laws should be enacted to provide for the advertisement of the State's opportunities and for assistance to desirable settlers in finding locations, and that in addition to legislation there should be a full co-operation of the various business bodies, of transportation interests and of individuals. Not waiting for legislation, the Alabama Commercial and Industrial Association took steps to give the State about as good an advertisement as it has ever had. As told on another page of this week's issue of the Manufacturers' Record, that body sent telegrams to half a dozen leading manufacturing companies of the East calling their attention to Alabama's natural wealth in iron, cotton, coal and timber, and the progress it has already made in iron and steel production and in cotton manufacturing, and inviting them, if they "want to be in the coming center of the world's activity and wealth," to come to Alabama. This bit of enterprise was thoroughly typical of the spirit dominant in the South—the spirit that has set a notable example in industrial development and which is coming to recognize more and more the benefit of letting one's light shine before men.

PARSEEING MANUFACTURERS.

One of the gratifying features of the opening of the textile school at the Agricultural and Mechanical College of Texas is the evidence in the shape of machinery for its equipment of liberality of Eastern manufacturers. A committee for the school visited the New England States during the summer and discovered among the manufacturers, with few exceptions, great interest in the school and a readiness to have their machinery represented in it. Their do-

nations in the shape of machinery represent \$11,625. These gifts, which have been duplicated in other Southern textile schools, are indications of the faith of the New England machinery manufacturers in the future of Texas as a cotton manufacturer.

CANADIAN RELATIONS.

Perennial discussion of relations between Canada and the United States, intensified at present in some quarters by the pending political campaign, is given valuable material in a work by J. Stephen Jeans, secretary of the British Iron Trade Association, on the resources and possibilities of Canada, with special reference to iron and allied industries and the increase of trade with the mother country. Mr. Jeans has enjoyed exceptional opportunities to study at close range the economic conditions of the Dominion. In 1890 he was, with the late Dr. Selwyn, director of the Canadian Geological Survey, in charge of a large party of members of the Iron and Steel Institute on a tour through Ontario and some parts of Quebec. He has since made other visits, and as a delegate of the British iron trade to the Congress of Chambers of Commerce of the Empire at Montreal in 1903 he met many of the leading commercial men of the country, as well as those prominent in political and legislative circles, and through intercourse with them, supplemented by a journey under most favorable conditions through nearly 11,000 miles of Canadian territory, he was enabled to gain a broad knowledge of Canadian ideas, aspirations and conditions.

In six sections he discusses the general features and characteristics of the Dominion and its population, tariffs, reciprocity, imperial consolidation, the bounty system, the relations of Canada and the United States in parallel and by contrast, the coal fields, ascertained iron-ore resources and the iron industry, general mineral, agricultural, water-power, forest and fisheries resources, the plan of government, labor conditions, transportation by rail and water, general trade and industrial conditions, with special reference to commerce with the mother country and with the United States.

Mr. Jeans considers that the Dominion has a special interest for the iron trade of Great Britain, because it has already the greatest market among the possessions of the British crown after Great Britain itself, because it has offered the mother country greater facilities and considerations than have been offered by any other British colony or possession, because its increase of population and consequent expansion in iron and steel consumption is likely to exceed greatly that of any other British possession, because it has enormous resources in the raw materials of the iron industry and is likely in the near future to enter on a large scale into the competition of ironmaking countries for the supply of the world's markets, and

because it is the attitude and the conditions of the Dominion that are primarily responsible for the controversy as to the fiscal policy of Great Britain in relation to her colonies.

Arguing from conditions in the past of the United States, Mr. Jeans suggests that Canada, being riper for rapid development, and having some greater facilities for such progress than the United States, perhaps, had at a similar period of its history, may be expected to advance more rapidly than the United States did at the same stage of its industrial history. This advance must affect the United States for good or ill, and its vital interest in the outcome lies in the fact that many of its citizens have invested money and energy in the Dominion. These persons, as well as thousands of others not directly interested in the Dominion, will find profit in reading Mr. Jeans' book.

VALUE OF LOCAL HISTORY.

In a recent issue of the Manufacturers' Record attention was called to the first volume of the "History of Mecklenburg County and the City of Charlotte" as one of the most valuable pieces of work which Mr. D. A. Tompkins has done for the community with which he has been so long identified. That volume was an interesting and comprehensive survey of the life of the county and the city. The second volume has now appeared, profusely illustrated and containing a mass of information in detail, together with ample discussions of important events, a collection of biographies and reproductions of official documents. Among the important topics treated are the Mecklenburg Declaration of Independence, customs of the pioneers, Andrew Jackson's birthplace, characteristics of the negro, showing differences according to difference of stock; mining in Mecklenburg, eighteenth-century money, and the "Black Boys" of Cabarrus. Especially valuable are the lists of Mecklenburg county representatives in the general assembly, of troops in the wars of 1812-14, 1861-65 and in the Mexican and Spanish wars, of ministers in the several churches, and of the mayors of Charlotte. In writing these volumes Mr. Tompkins has avoided argument, and has been successful in his effort to uncover truth. In attractive style he has presented a mass of facts of utmost importance to the student of North Carolina history, and his public spirit in planning and carrying out his task should be supplemented by a wide circulation of his volume among Mecklenburgers at home and abroad.

WORKING FOR THE SOUTH.

In a letter to the Manufacturers' Record referring to the movement of Italians to the South, Dr. John A. Wyeth of New York city writes:

I am much impressed by your editorial article in regard to immigration. I think you will be able to be of inestimable value to the South in this important movement as you have been in others which have added

so much to the wealth of that section. I approve most heartily of your movement looking to the visit of foreigners interested in cotton-manufacturing. I would not be surprised to see an extensive exodus of European manufacturers to the cotton district. I am such a believer in the future of the South that I have invested quite heavily of my savings in my old home place in Marshall county, North Alabama.

TO PREVENT FIRE LOSS.

At the recent convention of the International Association of Fire Engineers Perez M. Stewart of New York, chairman of the committee of examiners of property adjoining the Brooklyn Manhattan Rapid Transit Railroad, read a suggestive paper on the fire resistance of modern high buildings. He drew from the recent fire at Baltimore and from methods of construction in New York city illustrations for his propaganda of methods in construction whereby all but the most extraordinary fires may be confined, if not to the floor, at least to the single building in which they originate. He summarized generally the several fire hazards and the means for their reduction as follows:

1. Iron and steel structural building members lose their strength rapidly under the influence of even moderate heat, therefore should be thoroughly insulated. Portland cement concrete and hollow tile, not less than two inches in thickness at any point, are most efficient against the attack of both fire and water.

2. Stone of all kinds, wherever exposed to heat, either on the inside or the outside of buildings, fails at comparatively low temperatures. Baked clay and Portland cement concrete, on the contrary, are proof against almost any fire, besides withstanding excellently the application of water on their heated surfaces.

3. Vertical openings throughout buildings, as for stairs and elevators, rapidly communicate fire between stories. With buildings of considerable height or combustible contents this is likely to result in fire conditions beyond fire-department control. All such floor openings should be enclosed in brick-walled shafts, crowned by a thin glass skylight and extending through roof, and with fire-doors at openings to stories. All vertical light openings in such shafts should be glazed with wireglass.

4. Large, unbroken floor areas assist the spread of fire and serve to augment its severity. Buildings of considerable area and having large quantities of combustible contents should be subdivided by substantial brick fire-walls sufficient to form a positive barrier to the spread of fire.

5. Stair treads should preferably be of iron or its equivalent. If slate or marble treads are used they should be supported by a metal plate beneath.

6. A large portion of fuel for combustion in buildings having brick walls is supplied by the trim, floors, etc., as well as by such furnishings as are necessary for occupancy. Much of this can be avoided by the use of substitutes for wood or of metal-clad covered wood and metal-covered furniture.

7. Nearly one-third of the total fire loss is caused by the contribution of flame from one building to another through window openings. All windows subject to exposure should be thoroughly protected against the attack of heat. Wireglass in non-combustible frames has proven most efficient for the purpose, as it is always in position and is not subject to deterioration.

8. Every aid to the fireman in the shape of fixed equipment in the building adds so much to his capacity. Fire-alarms and thermostats, standpipes, stationary nozzle and sprinklers all mean more prompt and efficient application of water, and should be most generously and generally encouraged.

9. Last and most important, and this applies to the whole range of fire-loss reduction, only such systems and devices as have demonstrated their efficiency should be specified, and only such workmanship as lives up to the most rigid specifications should be permitted.

Mr. Stewart rightly assumes that every fire hazard may be remedied, and remedied as a good business investment. But from many years' acquaintance with the building trades he is convinced that the immense fire loss of the country, estimated by him as amounting to probably \$250,000,000 annually in property

destroyed and in trade and time lost, will be materially reduced only through individual adoption of means for self-protection. The law wisely framed may help, but the initiative must come from the individual persuaded of the efficacy of the means. His conclusions ought to be carefully considered, not only in such cities as Baltimore, where the supreme fire test of the country was given last February, but also in other cities that would avoid failure under such a test.

ANOTHER MARTYR.

Here is something which will probably be news to the South. The Philadelphia Press says:

Edgar Gardner Murphy has been known for 10 years past as one of the few men of the South who have steadily and consistently seen the necessity of advance and reform, agitated in its behalf and represented effort at improvement with the result that, like many who address themselves to this task in the Southern States, he has come North and is now conducting his campaign from New York city.

There is no worse indictment of the South than the fact that anyone who separates himself from the self-admiration of Southern communities and ventures to point out that every problem has not received its fullest possible solution in Southern society generally finds Southern society has ceased to offer agreeable residence. * * * A few men like Mr. Murphy, who, the instant they try to make their opinions practical, find a Northern residence more congenial than a Southern.

John White Chadwick suggested some time ago that this protege of the Philadelphia Press was "a Southern man of Northern antecedents," and a writer in the Boston Herald named him as being "one of the leading thinkers of the South, and now the superintendent of public schools in the State of Alabama and a loyal Confederate," but why should Mr. Edgar Gardner Murphy be thus without provocation enrolled—to be sure, tentatively and inexplicably—as a volunteer in the noble army of martyrs? It's real mean.

The Coming Regime of the Auto-Bus.

The recent interview in the Manufacturers' Record with a leading mechanical expert on the coming change in street-railway systems by virtue of the possibility, at least in large cities where

smooth pavements have taken the place of cobblestones, of the auto-bus supplanting the electric car, has attracted very wide and favorable discussion throughout the country. It was the first note of suggestion in any papers of the country, so far as we are aware, of what now within two weeks since its publication has been very widely discussed. We have published an editorial from the Philadelphia Press and another from the Worcester Gazette commenting very favorably on the points set forth in the interview, and now the New York Evening Mail, the New York Times and many other papers are taking it up. The Evening Mail in a recent issue said:

"Auto-omnibuses on the streets, supplanting trolley lines and offering a three-cent fare to passengers, are suggested as a possibility by the manager of a transit company. They may not be as much of a 'pipe dream' as they appear at first glance.

"Electric traction for heavy vehicles on streets as level as are most of the thoroughfares of this city, and smoothly paved with asphalt, is already a mechanical success. That it may also be an economic success, when applied to the transportation of passengers on a large scale and at a cheap rate, is as yet an undemonstrated proposition. The public surely has no objection to seeing the experiment tried. We have had several traction revolutions already. Still others may be in store."

"If successful, such a system would work a marvel of improvement on our streets. It would be perfectly consistent with a still further and profitable development of the underground passenger traffic. It would operate in harmony with the subway system. But it would probably abolish trolley cars and surface railway tracks and render the streets much more agreeable, safe and sightly than they are now.

"It may be conceived that, acting together with the subways, the auto-stages would also tend to the abolition of the elevated traffic and the eventual removal of the ugly and obstructive structures which the overhead transit necessitates. Our streets would be free at last.

"This may be a very long look ahead; there is no harm in taking it as we go along on our tumultuous and over-crowded way."

And under the heading of "Are Street Cars Doomed?" the Savannah News has an editorial in which it says:

"The Manufacturers' Record quotes 'a mechanical expert who has built and rebuilt more street railways than any other man in this country' as expressing the opinion that 'in a few years there will not be a street-car track in all New York.' And it is his belief that in other progressive cities the same will be true. Indeed, there are certain cities that will probably be in advance of New York in abandoning the street car, just as there were dozens of them that preceded New York in the final abandonment of animal power for the propulsion of street cars. In the opinion of this expert, auto-buses are the coming means for the moving of urban and inter-urban passenger traffic. In London, for instance, the movement has already begun. In that city not less than 400,000,000 passengers per year are transported in omnibuses, which vehicles are being changed from horse to electric power; and with the change of power it is calculated that the number of passengers moved will be very greatly increased. In New York, Washington, Los Angeles and Denver, among American cities, there is a decided tendency towards the auto-bus for surface passenger traffic. In each of the cities mentioned there are employed a considerable number of auto-buses in the public service, and without exception, it seems, they are giving satisfaction.

"By way of illustrating the growth of the auto-vehicle business, the expert said:

'During the last 12 months our automobile output exceeded in value all the locomotives built in America by \$20,000,000.' These remarkable figures are to be considered in connection with the fact that only a few years ago the 'horseless carriage' was a thing unknown in actual service and only dreamed of, while as lately as five years ago there was no automobile employed exclusively in the business of carrying passengers for a fixed fare, like a street car.

"City streets as originally designed were intended for independent wheeled vehicles and pedestrians. Oglethorpe, notwithstanding he provided Savannah with excellently broad streets, could not have foreseen that a considerable part of these streets would eventually be taken up by the tracks of cars running on metallic rails. The trend towards automobile passenger traffic, therefore, is somewhat in the nature of returning to first principles; and this movement will be accelerated as the cities complete the paving of their street areas. With smooth, unbroken street surfaces, free for and devoted exclusively to independently-propelled vehicles, there is reason to believe the traffic would move with less interference. In New York blockades are of daily and almost hourly occurrence on Broadway and Sixth avenue, which have two-track sur-

face roads, while a blockade is of rare occurrence on Fifth avenue, which has no surface tracks, but on which there is a line of auto-buses.

"In enumerating the advantages of auto-vehicles over vehicles that run on steel-rail tracks the expert whose views we are considering points out that the automobile can thread its way among vehicles where the street car must stop and wait; that the auto will pick up and deposit its passengers at the sidewalk, whereas the street-car passenger must walk to and from the middle of the roadway even in sloppy weather; that with the auto the great expense of building a track is obviated, and that there has been less change in auto-motors than in street-car equipments during the past five years. It is the constant changing that costs heavily in street-car operation in the leading cities. In one city named by the expert he had seen the system of traction completely changed four times in 12 years."

The Southern Farm Magazine.

While cotton and everything thereunto pertaining holds the center of the stage at present in the South, the wide-awake men of that section are not permitting the staple to monopolize their attention, but are continuing their long-standing campaign for other crops. In the October issue of the Southern Farm Magazine considerable attention is given to wheat by Col. J. B. Killebrew in his monthly "Talk With Farmers," and by Prof. Andrew M. Soule of the Virginia Polytechnic Institute and Experiment Station, in opening his new department, "All Around the Farm." The latter contends that there is not more than enough wheat grown to supply the home consumption, although there is no reason why millions of bushels should not be produced for export, and he proceeds to demonstrate how readily may be removed seeming difficulties in the way of the successful cultivation of winter wheat in the South on a very extensive scale. Colonel Killebrew notes record crops of 63 bushels and 46 bushels to the acre in Kentucky, and the making of from 25 to 30 bushels per acre by many farmers in that State and in Tennessee, and attributes these yields mainly to the preparation and fertilization of the soil. He insists that the grower would be far wiser in bending every effort to the increase of the yield rather than to the increase of acreage.

The wonderful success of Commissioner Watson of the South Carolina bureau of immigration in attracting to the State, within five months after entering office, two substantial colonies of Scandinavians from the Northwest emphasizes the opportunities for immigration to the South, a subject which is discussed at length by Richard H. Edmonds with special reference to South Carolina, but with application to the whole South. Missouri as a trucking State, the crop possibilities of Texas, the great chances for young men in the South and the World's Fair as a means of advertising that section among would-be settlers and investors are among the other topics specially discussed in this issue. The departments are full of unusually interesting matter for the home circle and the general reader.

The Southern Farm Magazine is published monthly by the Manufacturers' Record Publishing Co., Baltimore, Md. Price \$1 a year.

During the year ended September 1 Arkansas produced \$135,500,000 in agriculture, \$10,000,000 in fruits and berries and \$105,000,000 in lumber, shingles, etc., according to the estimate of Secretary Geo. R. Brown of the Little Rock Board of Trade.

PLANNING FOR THE VISIT OF INTERNATIONAL SPINNERS TO THE SOUTH.

The Question Before the New England Mill Men—Enthusiastic Support of the Proposition by Individuals and Organizations.

From the North, from the South and from Europe messages of many kinds continue to come to the Manufacturers' Record reinforcing the suggestion of a visit of international spinners to the South. Mr. L. P. Hillyer, cashier of the American National Bank of Macon, Ga., who introduced at the New York gathering of Southern bankers the resolution inviting by cablegram foreign spinners to visit the South, writes:

"I wish to congratulate you on the splendid efforts you have made and are making to get the English spinners to visit the South. The work which you are about to accomplish will, in my opinion, put the whole South under lasting obligations to you."

Mr. Edward Atkinson, who has so enthusiastically seconded the proposition, telegraphed to Secretary C. J. H. Woodbury of the New England Cotton Manufacturers' Association advising that the association send invitation to the Textile Employers' Federation to send a delegation to visit the Southern cotton section. To Mr. C. P. Scott, editor of the Manchester Guardian, he wrote:

"The movement to bring Englishmen interested in cotton to this side has taken the customary big dimensions of our enthusiastic Southern friends, and ought to receive a good response. The visitors will be put into palatial trains, dined and wined and speechified to no end, but they will have a very great opportunity to study the Southland in its process of regeneration through the emancipation of the white men from the burden of the slave system—about half accomplished. I am making up my mind to go with the party."

To the Manufacturers' Record Mr. Atkinson writes:

"I shall make my arrangements to be one of the party for the Southern trip, which seems to be well assured. I think nothing more needs to be done for its promotion. * * * I assume that your arrangements will be made to start somewhere between the 10th and the middle of October—just the right time."

Telegrams from Mayor Herman Myers of Savannah and the Board of Trade of that city through Mr. John B. Young have been supplemented by a letter from Mr. George W. Tiedeman, vice-president Chamber of Commerce, who writes:

"On behalf of the Chamber of Commerce of this city I desire to supplement the invitation sent you by Mayor Herman Myers of this city to secure the next convention of the international spinners for this city, assuring you that the commercial bodies and citizens generally will assist in making their visit here a most agreeable one."

The Savannah Press takes the position that such a gathering would be of the most important character, and inasmuch as the South holds the key to the situation as a cotton-grower, Savannah, as a great exporter of cotton, is anxious for a convention.

Mayor Myers followed his telegram with a letter, in which he writes:

"Our people will feel under many obligations if you will exert your influence toward securing the spinners' convention for Savannah. Our position as a cotton port and our ability to handle such a convention to the satisfaction of all concerned hardly need any statement from me to one so thoroughly posted as you are. If the convention comes to this city you can rest assured that Savannah will exert itself to make the local features of enter-

tainment such as will reflect credit on this city and the South."

Governor Newton C. Blanchard of Louisiana writes:

"I regret not being here at the date of the reception of your telegram, in order that I might have wired a strong endorsement of the proposition. I do so now by this means. An international cotton spinners' convention held in the South would undoubtedly result in great good to the cotton-growers of the South, to domestic manufacturers of cotton cloth, and to English manufacturers. The State of Louisiana joins with the other States of the South in the expression of the hope that such convention will be held at some point in the South. Why not New Orleans?"

Mr. M. J. Sanders, president New Orleans Progressive Union, and Mr. H. M. Mayo, secretary, write:

"The New Orleans Progressive Union, possibly the largest popular commercial organization in the United States, desires to express its appreciation of the effort now being made by the Manufacturers' Record to secure to the South a visit from the world's cotton spinners, with a view to acquainting these gentlemen with the importance of the industry as connected with the development of this country and its far-reaching influence upon the commercial interests of the world. The Progressive Union desires to suggest New Orleans as the location of the suggested gathering, and trusts that you will put forward the claims of this city, resting, as it does, in the very heart of the cotton section of the South, and in a position, willing and anxious, to manifest its hospitality and its attractions to the cotton spinners of the world. New Orleans today represents one of the chief actors in the business development of a great South, and as the chief city of a magnificent territory south of a line drawn east and west through the Ohio valley it is in a position to look after the comfort and convenience of the proposed excursionists and to manifest clearly and concisely the potential and growing interests of a wonderful South."

Alexander Helper, secretary-treasurer of the Commercial Association, Danville, Va., writes:

"The Commercial Association of Danville learns with great pleasure of your well-timed and patriotic move of having the cotton spinners of the Northern States and of Europe to visit the South for the purpose of a personal inspection of its wonderful advantages and splendid capacity for the production and manufacture of cotton. Permit me personally to congratulate you on your most eminently wise and judicious action in this matter. This proposed endeavor on your part is in the line and policy of your magnificent journal—a journal that has for many years done so much splendid and practical work in the uplifting and upbuilding of our native Southland. This latter move on the part of your paper is one fraught with immense benefit and material advantage to the whole world. The Commercial Association of Danville extends to these representative business men, who will no doubt accept your invitation with great pleasure, a most cordial and hospitable welcome to Danville, as we all feel that inasmuch as we are the 'Pride of the Piedmont' we could not afford to let these representative men pass through our section without placing the latch key upon our open doorway to the South. Our cotton mills in Danville we feel justly proud of, especially the Dan River Cotton Mills, now being

erected, and when completed costing about \$2,500,000, and when in full operation employing 2000 hands, consuming about 40,000 bales of cotton per annum."

Mr. F. R. Rose, secretary of the Fayetteville (N. C.) Chamber of Commerce, says:

"What is the chance of inducing the English spinners to take in Fayetteville, N. C., on their route while visiting the South?"

Harvie Jordan, Monticello, Ga., president Farmers' National Congress, writes:

"I would be pleased to have you add my cordial invitation to the British spinners to visit this country. If they should accept the invitation extended I very much trust I shall have the pleasure of meeting with them during their visit South. I would regard their visit to us as a matter of very great importance to the future cotton interests of the South."

Strongly commanding the action of the Southern bankers in inviting the foreign spinners, the Wilmington Messenger says:

"Europe is now looking for other sources of supplies for her mills. Experiments are being made in Africa, Asia and Southeast Europe. These ventures are costly, and even if finally successful, it will be several years before there could be produced sufficient quantity of a quality to make up the South's present production, to say nothing as to supplying the expected increased demand over our present output. These experiments would cease to a large extent were the South to demonstrate to the world that she is able to meet the emergency and supply the cotton for all the mills. The greatest difficulty in her doing so is the scarcity of labor. This must be overcome by the introduction of the proper class of immigrants from the North and from Europe."

Equally hearty is the support given to the suggestion of the Manufacturers' Record by the Charleston (S. C.) News and Courier, which says:

"The great good that would result from such a convention must be apparent to everyone. Opportunity would be afforded for demonstrating to the spinners of the world that the Southern States are able to produce all of the cotton that the world needs at the present time, or is likely to need for some years to come. We would be enabled to demonstrate to manufacturers the superior advantage of the South as a cotton-manufacturing as well as a cotton-growing center, and we would be enabled to put forward more strikingly than has yet been done the marvelous development which has characterized the cotton-mill industry in the South within the last quarter of a century. But these are but a few of the good results which the convention proposed by the Manufacturers' Record would achieve. It is to be hoped that that estimable journal itself, one of the most potent influences in Southern development, will carry its present project to the successful conclusion that it has in times past carried many others of a meritorious nature. We are entirely convinced that it may confidently count upon whatever support and assistance it may desire to receive from business men in every walk of life in the South."

Looking at the matter from the standpoint of the growers, the Florida Times-Union says:

"The proposed international cotton manufacturers' convention ought to prove of incalculable value to the South. The manufacturing nations of Europe have overcrowded populations, but no land on

which cotton can be grown. The South has far beyond 100,000,000 acres of un-tilled land that would produce as much cotton per acre as that which is in cultivation, but nobody to bring it in cultivation. The present population of the South is cultivating all the cotton that it can work profitably. The shortness of the cotton crop has caused much loss and more or less suffering in Europe. European nations are making costly experiments in Africa to find conditions of soil and climate that will make the production of cotton profitable. Months ago the Times-Union pointed out the fact that they could easily accomplish all they wish by sending agricultural immigration to the South. Tens of thousands of farmers are leaving Europe every month. Where they settle they find no crop that pays them better than cotton would pay. Moreover, they cultivate no crop that could not be grown as well in the South. If they would raise wheat or corn, they could raise it at the South and find a higher home market for their products. If they would grow potatoes or any kind of vegetables, they would get their products on the market quicker from the South than from any other section, and would, therefore, get better prices. If they would give their attention to fruits, the South offers far better advantages than they could find in any other section. But in the South they could make everything they wished to consume and have as a surplus cotton—the easiest marketed, and one of the most profitable crops that can be grown. The farmers who leave Europe would accumulate wealth more rapidly in the South than anywhere else. And if only the agricultural part of the immigration now coming to the United States were turned Southward, it could increase the cotton product by 500,000 bales per year. In 20 years the product could be doubled. How long would it take to double the product in some new cotton-growing sections? It has taken the South over 100 years to produce crops of the present size. It took the South over a half-century to produce a crop of 3,000,000 bales. If the influence of the cotton manufacturers were exerted to turn the tide of immigration to the South it would do more in 10 years to relieve the present situation than can be done by hunting for cotton land elsewhere in 50. Besides, this would be counted on with certainty, while no one knows whether cotton-growing land will ever be found elsewhere in sufficient area to meet the needs of the situation."

The Boston Journal of Commerce and Textile Industries says:

"A suggestion, emanating from Baltimore, has been made to the effect that an international convention should be held at some central point in the midst of the Southern cotton belt, at which, as far as possible, all those interested in the manufacture of cotton should be invited to attend. The suggestion has been eagerly taken up by the representatives of the textile industry, both in the North and South, and there appears to be an enthusiastic and unanimous opinion freely expressed that prompt measures should be taken to ensure the realization of such an excellent suggestion. Nothing could more effectively demonstrate the pre-eminence of this country in cotton production or augment its importance in cotton manufacturing as such a convention of practical men, thoroughly conversant not only with the cotton-manufacturing conditions of this country, but also with those exist-

ing abroad. * * * Moreover, nothing could be better calculated to neutralize or remove the rivalry, gradually becoming more and more developed, between European countries and the United States, as well as between the Northern and Southern sections of the United States itself, in matters appertaining to the textile industry; nor can we imagine anything more likely to promote a community of interest in or to confer more permanent benefits upon the entire industry, as affecting the world at large, than such an international convention. From all sections of the country letters are pouring in from planters, manufacturers, agents, corporations and companies practically unanimous in favor of the adoption of the suggestion, and we feel assured that organization is all that is required to make the convention an unequivocal success. In view of the efforts

which are being so assiduously carried out abroad to render foreigners independent of the Southern States for their supply of the raw material, it would be a most significant and effective object-lesson to permit the British and European representatives of the cotton industry to see for themselves the almost illimitable territories available for cotton production in the Southern States, to take a tour through the great Southern cotton zone, and to visit a few of our representative manufacturing plants. That they would thus be deeply impressed with our almost inexhaustible resources goes without saying, and it would prove as nothing else can the latent capability of the Southern States to produce a supply of cotton commensurate with any demand that may be made in the future for the needs of the habitable globe."

LIVELY INTEREST IN MANCHESTER.

An International Meeting Favorably Regarded in the Center of the British Textile Industry.

In a letter to the Manufacturers' Record following his cablegram that the Master Cotton Spinners' Association would probably accept an official invitation from the American cotton trade to visit the South, Mr. C. P. Scott, editor of the Manchester Guardian, writes:

"The suggestion made by you has been favorably received here, but I do not think there is any prospect of its being acted on unless it is officially endorsed by the representative cotton-trade association or associations in the United States."

In the issue of September 12 of the Guardian were reproduced the correspondence of the editor of the Manufacturers' Record and of Mr. Edward Atkinson of Boston with Mr. Scott, while the Guardian said editorially:

"We have received from the editor of the Manufacturers' Record, Baltimore, Md., a letter (printed elsewhere) suggesting an international gathering of English and American cotton spinners in the Southern States this autumn. The letter is supplemented by an article in the Manufacturers' Record, which we also reproduce. It is perhaps rather a delicate matter for those who would be more or less in the position of guests on such an occasion to express an opinion as to whether the gathering should be arranged, at any rate until the American manufacturers have made known their own feeling and have extended an official invitation to the representative cotton-trade associations in England. But there can be no doubt that a visit to the cotton fields and cotton mills of America would be of the greatest interest and educational value to very many Lancashire spinners and manufacturers, and it is equally certain that personal contact with some of those who are actively engaged in the industry in the United States would be both pleasant and stimulating. The natural sequel to such a visit would, we conceive, be a similar international conference in England, at which Americans might be afforded an opportunity of learning some of the things which we consider ourselves able to teach them about the spinning and weaving of cotton. The suggestion of the Southern textile paper is very cordially endorsed by Mr. Edward Atkinson of Boston, who, although no longer engaged in the trade, occupies a position of almost unique influence amongst the New England cotton manufacturers, and is regarded as the father of the American cotton industry. In the long letter from Mr. Atkinson, which we print today, and in the letter and article from the editor of the Manufacturers' Record, there is little or no attempt to conceal the belief that our British cotton-growing movement is a work of supererogation, and that a visit to the Southern States of America would convince Lancashire

business men that the undeveloped agricultural resources of that region are far more than sufficient to supply all the prospective needs of the world's cotton industry. This may well be so, and the most ardent supporters of the British Cotton-Growing Association would be the very first to welcome the perfection of the mechanical picker described by Mr. Atkinson and a substantially increased production of raw cotton in America. But we have to be guided by experience, and experience tells us that of late the development of the Southern States has been industrial rather than agricultural. Industrial development means an increased domestic consumption of products of the soil and often a diminished surplus of such products available for export. What remains to be proved is whether there can be any great addition to the annual cotton crop of America except on the basis of higher values than have ruled in the past, and if not, whether additions to the present supply of raw cotton cannot be obtained on better terms from other sources than from America."

In its next issue the Guardian reproduced from the Manufacturers' Record the views of Southern manufacturers and others about the project, and said that it had been very favorably received by mill owners and managers of Manchester. It added:

"One of our representatives in a series of interviews found that the suggestion will certainly have a practical issue if it is taken up by the American Cotton Spinners' Association, and this result is not unlooked for here. One of the leaders of the Lancashire cotton industry pointed out that an international committee was appointed by the Zurich Congress to aid the common interests of cotton manufacturers, and that to this committee any proposal of an international conference would be referred. As to whether a visit to America of English cotton spinners and manufacturers was likely to have valuable results he was not doubtful. 'Merely,' he said, 'to bring English spinners face to face with those in the Southern States would be a great good. As to the cotton fields, there would be complete unanimity between the English and the American trade. It is the interest of both to secure an abundant supply.'

In the issue of the Guardian of September 14 Mr. C. W. Macara, president of the Federation of Master Cotton Spinners' Associations, heartily reciprocated the proposal and made it clear that if an invitation were extended to Europe by the accredited cotton organizations of America he would do his utmost to bring about its acceptance and to promote the success of the gathering. Mr. Macara said:

"I think such a gathering, if it could be

arranged, would do nothing but good. It is really a proposal in the direction in which, as a result of the Zurich Conference, we have already begun to move. It is not altogether new proposal, because we have received more than an invitation to send delegates to the American congress. The last one came just at the time that we were preparing for Zurich, and it would have been difficult then for us to have accepted it. Both in an official and in a personal capacity I think it highly desirable that everything that is possible should be done to bring all nationalities of cotton manufacturers into line. The harmony at the Zurich Congress was remarkable, and our readiness to welcome the co-operation of the American spinners and manufacturers is shown by the fact that we have been in correspondence with them in regard to the short-time movement, and they have co-operated with us in that, and thereby helped us in Lancashire to avert a great disaster. The report of the Zurich Conference is to be circulated extensively in America, and other steps are being taken to promote a better understanding between cotton manufacturers on both sides of the Atlantic. Friendly feeling all around will be helpful all around, and on our side we want to do all we can to promote it."

Mr. J. A. Hutton of the British Cotton-Growing Association, in conversation with a representative of the Guardian, said he did not see how an international conference of cotton manufacturers in the Southern States could possibly do any harm, while, on the other hand, he had not the slightest doubt that it would do good. As to the possibility, hinted at in the opinions collected by the editor of the American Manufacturers' Record, that the conference might lead to an increase in the cotton-growing area in the Southern States, Mr. Hutton, speaking as an individual, thought the British Cotton-Growing Association will not in the least mind such a development. The association would, he considered, be only too glad if the Southern planters would grow more cotton, though, as the operations of the association were limited by the terms of the charter to the encouragement of cultivation within the British empire, he did not see that it could do anything to stimulate production in America. An increase in the area under cultivation in the Southern States, he pointed out, would not in any way lessen the importance of the association's work, for if new sources were not developed in other parts of the world manufacturers would still be dependent for their supply on the vagaries of the weather in a particular country. It was, therefore, in the interests of American as well as of British manufacturers that the sources of supply should be multiplied.

The Textile Mercury of Manchester says:

"While we cannot agree with our Baltimore contemporaries that the present year is desirable or possible for such a confer-

ence, nevertheless we trust that it may be arranged as soon as practicable. Although most of our English cotton spinners are dependent upon 'the South' for their raw material, few of them have visited that region or made any close study of its advantages for cotton-growing as compared with the rest of the world, and still fewer know anything at first hand of the development which has already taken place in cotton manufacturing in the South. Such a conference as that now proposed would remedy these defects of knowledge and serve other very desirable ends, not the least of which would be the strengthening of the good understanding that happily marks the relationship of the two great English-speaking peoples. On Tuesday Mr. C. W. Macara, president of the Federation of Master Cotton Spinners' Associations, reciprocated heartily the expressions of opinion in favor of such a conference, and we have no doubt that the members of the Federation will take steps to bring the suggestion within the range of practical realization."

Mr. Fred Mayor, editor of the Textile Journal of Manchester, writes to the Manufacturers' Record as follows:

"Much interest has been aroused by your valuable contribution to the Manchester Guardian dealing with American cotton-growing, and I may tell you that, notwithstanding the enthusiasm which has been displayed in the British empire movement to widen the area of cotton cultivation, there was a strong conviction in the minds of some of the shrewdest buyers of the raw material in this country that directly the shortage of American cotton disappears and the price assumes normal proportions, the demand, for instance, for the West African staple will diminish. For it is felt that it will be impossible for British empire grown cotton to be sold in competition with that of American at a margin of profit to the shipper. This view is held, I happen to know, by one of the leading shipping houses which is at present shipping cotton from the west coast of Africa. It is not surprising, therefore, that the cotton belts of America retain their interest for Lancashire consumers. Your timely suggestion that an international meeting of cotton spinners be arranged is highly appreciated in many quarters here, and the view is growing on this side of the Atlantic that the consumer should get more closely in touch with the cotton fields. If the American planters and consumers could offer feasible proposals in this direction, if they could hold out any prospect of cotton being grown in America to materially feed the spindles of other countries at a reasonable figure, those proposals would be of inestimable value and would be welcome by Lancashire spinners and manufacturers."

"It appears to me that you have struck a useful vein in proposing an international gathering, and I imagine that the results will reflect the mutual interest of England and America in the supply of raw cotton."

PRESSING THE INVITATION TO FOREIGNERS.

Representative Bodies Enthusiastic for the Coming of Cotton Manufacturers to the South.

[Special Dispatch to Manufacturers' Record.]
St. Louis, Mo., September 27.

The Cotton-Growers' Convention at the World's Fair, representing the producers of the staple in the whole South, passed last night the following resolution of invitation to visit the South:

"The Cotton-Growers' Convention, representing the millions of cotton-growers of this country, recognizing that there should be mutuality of interest between the producer and the consumer of this great staple, and appreciating the fact that both are alike interested in overcoming the power of the speculator in creating the wide fluctuations of prices which are

a curse to all, extend to the cotton manufacturers of Great Britain and Continental Europe, through this resolution, an invitation to visit the country. Only through a personal study will it be possible for them to fully realize that every effort to unduly depress prices will, through the injury thus done the planters, finally react on the manufacturers. The cotton-growers of the South are endeavoring to take the lead in devising ways to lessen the power of the speculator, and thus to prevent the wide fluctuations in prices, and they invite the manufacturers of Europe, as well as those of New England and the South, to aid in the good

cause. If the cotton manufacturers will unite to give the assurance of a permanently fair price for cotton—a price which will yield the grower a profitable return for his labor (and barring the boll-weevil as an unsolved problem)—the South will guarantee to furnish sufficient cotton to meet the world's ever-increasing demand. The Cotton-Growers' Convention extends this broad invitation to visit and study the South to the Textile Employers' Federation of England and such other textile organizations as represent this, the world's most important industry."

[Special Dispatch to Manufacturers' Record.]
Anniston, Ala., September 23.

The Alabama Commercial and Industrial Association in annual session here, representing the business organizations of the State, has sent the following cablegrams:

"Textile Employers' Federation,
Manchester, England:

"The commercial organizations of Alabama in annual convention heartily invite your body to visit the cotton-growing States. The South can produce enough cotton to supply the world's needs. Come and see for yourselves.

"ALABAMA COMMERCIAL AND
INDUSTRIAL ASSOCIATION."

"Guardian, Manchester, England:

"Commercial organizations in annual convention extend heartiest invitation to cotton manufacturers of Europe to visit the South. With an increase of population and fair prices this section can as fast as needed double its cotton production. English manufacturers in personal study of conditions may help to overcome wide fluctuations in price to benefit of planters and manufacturers. Alabama officially invites the manufacturers of Europe to come and see.

"ALABAMA COMMERCIAL AND
INDUSTRIAL ASSOCIATION."

THE NEW ENGLAND COTTON MANUFACTURERS.

Board of Governors Authorized to Act Upon Invitation to English Spinners.

[Special Correspondence Manufacturers' Record.]

New York, September 24.

At the semiannual meeting of the New England Cotton Manufacturers' Association at Mt. Washington Hotel, Bretton Woods, N. H., this week, I found less comprehensive understanding of the significance of the proposed visit to this country of English spinners than I had expected. True, the conditions were hardly such as would conduce to a keen appreciation of the merits of any new proposition, for the counter-attractions were very great, and all of the papers on the program being printed, there was a more or less perfunctory performance of the work of the meeting. Most of the members had their wives and families with them, and mountain rides, walks and other social diversions occupied a good share of attention and time. While the meeting was quite representative of the substantial milling interests of New England, and while serious matters were covered in the papers and discussions that ensued, the sessions were late in beginning, and finally some of the papers were simply read by headings and then distributed for careful reading at leisure.

Thus, it seemed to me, it would have been difficult to introduce any subject on which there had not been considerable previous thought with any hope that it would be deeply considered at this meeting, and definite action, the result of mature thought, secured.

From what I had seen in the way of letters and telegrams from governors of Southern States, representatives of commercial bodies, railroad officials, cotton-planters and Southern cotton-mill men of the sort that count, and from what I heard

The following telegram was also sent:
"New England Cotton Manufacturers'
Association, Bretton Woods, N. H.:

"The commercial organizations of Alabama now in annual convention send greeting to the New England Cotton Manufacturers' Association and express the hope that your body, representing so large an interest in the cotton-manufacturing world, will join in extending to the manufacturers of Europe an invitation to visit this country and in person study the resources and capabilities of Southern soil and climate, and learn that, with the tide of immigration once turned this way and with fair prices for cotton maintained, the South will guarantee a supply of the raw material sufficient to meet the ever-widening requirements of the world. As the iron and steel masters of America have always in a broad spirit extended an invitation to the British Iron and Steel Institute to visit this country, we feel that the cotton manufacturers of America will with equal broad patriotism welcome the visit of cotton manufacturers of Europe.

"ALABAMA COMMERCIAL AND
INDUSTRIAL ASSOCIATION."

[Special Dispatch to Manufacturers' Record.]
Providence, R. I., September 23.

To the New England Cotton Manufacturers' Association in session at Bretton Woods, N. H., the Providence (R. I.) Board of Trade sent the following telegram through its president, Mr. S. H. Jackson:

"We urge your association to join with the Southern Bankers' Association in their invitation to the cotton manufacturers of Great Britain and the Continent of Europe to attend the international convention of cotton manufacturers in America this fall."

Personal telegrams of like purport were sent to the New England Association by a number of bankers of Providence.

age in cotton by experimenting in Africa and other places, where all the machinery, physically, financially and industrially, will have to be created, which would necessarily be a work of many years.

Col. S. F. B. Morse, president of the Southern Cotton Corporation, organized with the purpose to improve in any way possible present conditions of raising, handling and marketing cotton, went to the Bretton Woods meeting to present to the members of the convention the suggestion of the Manufacturers' Record that the New England Cotton Manufacturers' Association join in the many invitations which have already been cabled and written to the English spinners asking them to attend such international cotton-spinners' convention as has been proposed. This, in accordance with a cabled intimation from Mr. C. P. Scott, editor of the Manchester Guardian, to Mr. Edmonds to the effect that if invited to come the English spinners would probably do so.

The invitation was delivered by Colonel Morse, but it was not up for discussion. On being read it was, on motion, referred to the governing board of the association, with power to act.

It is the expectation, however, that when, at their leisure, the members of the association have had opportunity to consider the question in all its bearings, they will be impressed with the advantages of having the proposed international convention, and will look at the matter very much in the same light as have the large number of representative men in all callings who have already heartily endorsed the movement.

That the objects arrived at are inseparably connected with any general consideration of the cotton industry was amply demonstrated in the topics of some papers read at the New England Cotton Manufacturers' Association, all of which must have been prepared in advance of the proposal to hold an international cotton-spinners' convention. Especially was this true in the case of the paper by Mr. Henry G. Kittredge of Boston, wherein he maintained that 17,000,000 bales was probably the maximum capacity of cotton-production the South could ever reach.

In the discussion that followed Mr. D. A. Tompkins of Charlotte, N. C., who in his paper had championed a system of cotton-warehousing, took issue with Mr. Kittredge. He declared that within 25

years he believed the South would be raising nearer 25,000,000 bales than 17,000,000, and said that the crying need of the South today is more labor. He thought the New England Cotton Manufacturers' Association could with advantage to all concerned turn itself into a Southern immigration bureau pro tem. Out of 800,000 people who came to this country last year, the South got but 2500, while his own city of Charlotte alone had received that many people from New England and other States of the North. Everybody in the South is at work. Every available source of labor supply has been drained. The proportion of people who are at work is as great as in any other part of the country, but the South is short of labor. While more acres of cotton are being planted, it is questionable if they are being as well worked, and it is a tremendous question whether there will be labor to pick the crop. "If we are to take care of a big crop we must have some foreign immigration." It is all right, said Mr. Tompkins, to experiment in India and Africa, but it is impossible to establish a new industry in a few years, and if England were to send people and money to this country meanwhile it would be possible to relieve the present cotton stringency within five years' time.

The question of wages having been raised, Mr. Tompkins declared that labor in every line was better paid in the South than in New England, excepting possibly in cotton-manufacturing, and even there it was on a parity, while the cost and conditions of living were more favorable; because more wages can be saved, opportunities to advance are greater and prosperity more universally abounds.

Since returning to New York I have talked with a number of leading Southerners, men representative in their various lines of business, who have advanced the suggestion that as the South originated the idea of holding an international cotton-spinners' convention, and since, as one gentleman remarked, some of the New England cotton-spinners may learn, through an observation tour of the South, what they do not seem to now know and are not likely to learn in any other way, the South ought to invite as their guests not only the cotton-spinners of Europe, but those of New England as well, paying all the bills and extending hospitalities to each alike.

ALBERT PHENIS.

TEN CENTS AS MINIMUM PRICE FOR COTTON.

Important Steps Taken by the Cotton-Growers' Convention at St. Louis—The Question of Warehouses.

[Special Dispatch to Manufacturers' Record.]

St. Louis, Mo., September 27.

The Cotton-Growers' Convention, representing the entire South, after thoroughly canvassing the condition of the crop and the prospect for yield, urged farmers of entire South not to sell their cotton at less than 10 cents, fixing this as a minimum price to be accepted. If individual farmers are compelled to realize on a part of their crop they will be urged to sell as little as possible and to market the balance slowly. Such action by this convention will unquestionably have a very marked effect in strengthening the views of planters on 10 cents as a minimum, and against the organized effort of the planters, who are in better financial shape than for years, it will be difficult for the bears to make any serious break in price. The South is practically assured of receiving for this crop, including seed, at least as much as last year, or \$660,000,000, with some prospects of going to \$700,000,000.

The convention has discussed warehous-

ing from every point of view, and accepts without dispute the supreme need of warehouses throughout the South. Many plans will be discussed as an outcome of this agitation, and finally some broad proposition will be accepted everywhere as the solution of the greatest problem connected with cotton-handling. Individual warehouses will be established here and there, and efforts will be made by promoters of various schemes to organize co-operative warehouses to be owned and operated by farmers, but visionary as such enterprises are, they serve to awaken the world's attention to the importance of a better system of marketing cotton.

While it was evident that every delegate was most enthusiastic as to the need of warehouses and good results to follow their establishment, it was not, as thoughtful men knew, possible for the convention to develop a warehouse system. It did favor an effort advocated in Texas of a co-operative movement by farmers themselves to establish such a system, but the plan is entirely too visionary to be suc-

cessful. Its agitation, however, will do good, for there is room for many warehouse companies, and if co-operation could succeed in working out such a problem, even in part, it would be an excellent thing. The speech made yesterday by Sam Morse against speculation as a curse to the farmer and manufacturer, illustrated by many striking facts showing how superstition rules cotton speculation,

proved the keynote of the meeting and a continual topic of discussion. Speeches on the subject of warehousing were made also by Messrs. Williams, Summerwell and Edmonds. [The full text of Colonel Morse's speech is published below.]

The farmers fully appreciated the desirability of asking the cotton manufacturers of Europe to visit the South, and unanimously passed resolutions to that end.

MECHANICS OF THE HANDLING OF COTTON.

By COL. S. F. B. MORSE, President of the Southern Cotton Corporation.

In speaking of the purposes of the Southern Cotton Corporation it might be well to consider the cotton industry along the broadest possible lines. This tender plant, a mere weed if permitted to grow wild, plays a more important part in the industrial and commercial world than any other product of extensive industry in the world. According to Mr. Edmonds, it requires \$2,000,000,000 of capital and produces annually an amount of finished material of almost the same value. The output of the cotton mills exceeds by \$300,000,000 the value of the entire iron and steel product. The export of cotton in lint alone exceeds the total value of corn, flour, cattle, hogs and mineral oils, otherwise our greatest items of export. The cotton crop of the year which closed on September 1, including seed, was worth to the South \$660,000,000, or twice the gold production of the entire world.

These are stupendous items. They almost stagger the imagination, but they do not by any means represent the full value of cotton to this country. Last year, when Europe was dumping our declining stocks on Wall street and financiers feared a further slump of panic proportions, cotton came to the rescue. Cotton bills are payable in gold, and during October and November, 1903, the raw fiber to the value of nearly \$150,000,000 was exported. The payment for these receipts abroad was the cause of the collapse of the foreign exchange market during November. During the last decade we have exported more than 30,000,000,000 pounds of cotton, valued at about \$2,500,000,000. This one item of cotton alone has sufficed to turn the tide and keep the balance of trade in our favor.

Considering the importance of cotton and the part it plays in our national financial welfare, it would seem that every effort would be made to perfect the industry and foster its growth. If you will go over the great wheat-growing section of our country you will find the most up-to-date methods employed. From seeding to harvest time, and even until the grain reaches the mills or is sent abroad, you will find the acme of industry and intelligence displayed in handling the output of the fields. Constant improvements are being made in machinery; monster elevators are scattered at the different points of concentration; great ships can be loaded in an hour with their precious cargo. Even in the case of cattle and hogs we find that the packing industry has made such strides that it is as near perfection as the ingenuity of man can bring it.

How is it with cotton? I merely have to quote an eminent authority's apt remark when he said that "cotton is the most barbarously handled product in the world." For over 100 years there has been no material change in this respect. Since 1897 the extreme yield of the Southern cotton belt has varied only about 10 per cent., whereas under these conditions the price of cotton has fluctuated about 200 per cent. In 1896 we raised our largest crop, 11,250,000 bales. In that year middling cotton sold in New York for five and one-quarter cents, and the highest price reached was only a little more than six and one-half cents. In the South cotton

sold that year for less than five cents. In the cotton year just closed the crop was about 10,000,000 bales, yet the maximum price at New York and New Orleans was 17½ and 18 cents. Speculation has been blamed for the sensational advance of last year. While speculation may have accentuated conditions, the real causes of these extreme fluctuations were the differences between a glutted market and starving spindles; the difference between a feast and a famine and no thought for the morrow. The cotton world has not shown the wisdom of the Pharaoh who played the seven fat years against the seven lean. The old Egyptian king of thousands of years ago was wiser in his day and generation than the cotton trade of the twentieth century. And it is simply this lack of foresight on the part of both planters and manufacturers that is responsible for the losses of the past and the demoralized condition of the textile industry today. Growers and consumers alike have gambled on what nature might produce. The manufacturer has wagered that he would get abundant supplies and at a low figure; the farmer that he would get a good crop, and trusted to Providence about the price. If the crop was a large one the manufacturer won. He produced his requirements at a low figure. If the crop was short the farmer was not even then secure of a compensating price. As a usual thing he needed money too badly to hold his cotton back, and others got the reward which should have gone to him. Last year, and last year alone, did the farmer receive an unearned reward. The world had warning of a shortage, and high prices had come even before the fleecy staple had been picked from the bolls.

I contend that the question of price should be an issue between the producer and the consuming manufacturer based upon the natural law of supply and demand, and not subject to irresponsible influences, as is too often the case. These extremes of fluctuations, whether high or low, are demoralizing to each. Fifteen cents one year and five cents the next leaves the manufacturer utterly at sea as to the prices he may receive for his goods. The planter also is in a quandry as to whether he must curtail his acreage and leave his cotton to rot in the field or plant more land than he can cultivate properly. The low price is an injustice and an injury to the farmer, while the extremely high price means paralysis to the textile industry.

It was to contribute to a remedy of just such a condition as this that the Southern Cotton Corporation was formed. One of the purposes of this corporation is to promote the establishment of a system of thoroughly up-to-date cotton warehouses throughout the South at the principal points where cotton is concentrated. By this warehouse system the Southern Cotton Corporation hopes to achieve for the planters of the South what the grain elevators of the great West and Northwest accomplished for the farmers of that section. Cotton at present is rushed forward during the months of September, October and November, with the result that the market is glutted and the price unduly depressed by the congestion of receipts.

Even now, when the world does not know whether the cotton crop this year will be 10,500,000 or 11,500,000 bales, speculators are waiting for the receipts to come forward in such quantity as to depress the price of cotton. The number of bales that come forward in these three months is by no means an indication of the size of the crop. Last year they were simply enormous, and yet the crop was fully 1,000,000 to 1,500,000 bales smaller than many operators had estimated it. It was simply a rush of the planters to get money for their crop, supplemented by urgent demand, and otherwise was without significance. This scramble always works a great injury to the grower. Regardless of the ultimate yield, under existing conditions the price is always lowest when the cotton is leaving the farmers' hands, and must so continue until a remedy shall be applied. Speculators and all other agencies do not care to undertake a bull campaign while the cotton is moving in bulk upon the market. Last year was the first time such an astounding thing was ever attempted, and the world was not then aware how near to a calamitous failure the effort proved to the moving spirit therein.

Another thing: The movement of cotton has always been financed, not by the South, but by the money interests of the North and East and Europe, representing the mill element. A great deal of blame has been attributed to the planter for rushing his cotton to the market. He did so merely in response to urgent need and demand. Hitherto, or at least until the last year, Southern bankers have depended largely on New York to aid in giving credit to merchants, who, in turn, credited the farmers on the crop-mortgage plan. When the demand came from New York for return of money the Southern bankers called on the merchants, and the merchants urged the planters to bring their cotton in. The whole haphazard style of doing business tended toward rushing shipments and overloading the market.

Warehouse as a Regulator.

A warehouse system planned on a broad scale for the storage of cotton, and contemplating a uniform receipt, in my opinion, would correct many of these evils. In the case of the grain elevator the negotiable receipt has made possible the prosperity of the Western wheat-grower. Without the elevator it would have been practically impossible to handle the great crops of the grain belt, except at a disadvantage. The receipt issued to the farmer or buyer of grain furnished the best form of collateral and gave to the grower, the buyer and the banker an opportunity for doing business safely and expeditiously. If this could be done with wheat, why not with cotton, a commodity which furnishes the most gilt-edged security in the world?

In this way the planter can store his cotton until he gets a fair return for the labor and money expended in cultivating and gathering his crop. If the yield happens to be a "bumper," and in excess of the world's requirements, he can store his cotton, obtain his receipt, negotiate it and satisfy his present pecuniary requirements. Then in the lean years he can let go of his holdings at a price which he considers justifiable. By so doing he will rob the speculators of their opportunity to unduly depress the price of the commodity. If the yield in the following year happens to be short, he can sell this cotton and thus check the tide of rampant speculation that is always the accompaniment of the poor crop. I believe that a broadly planned warehouse system would bring stability both to the cotton-growing industry and the manufacturing world. There would be no enormous increase or decrease in acreage brought about by the allurements or

discouragements of excessively high or low prices, but there would be a steady growth in the area planted as the world's needs expand. I also believe that the present wild fluctuations would be a thing of the past, and that nature's abnormalities either of excessively large or small yields would be modified by this exercise of intelligence. It must be remembered that not only is the cotton plant most sensitive to climatic conditions, but the cotton market is more sensitive than any other commodity market. The changes in price are more rapid than in any other product. Between the time a farmer starts from his home to sell his cotton in the nearest market and the time he gets there prices may change from \$5 to \$10 a bale. Under such conditions is it any wonder that the spot markets a dozen times a year are absolutely paralyzed by wild fluctuations and dry-goods jobbers and cotton manufacturers are deadlocked over the prices that should be paid for goods?

During the last year the mills undoubtedly have suffered most from the fluctuations, because the market for the most part ranged around an unusually high level. As a rule, the farmer has been the sufferer. A surplus of 500,000 or 1,000,000 bales under present conditions may cause a decline of \$100,000,000 to \$300,000,000 in the price received by the farmers for their product. It is a commercial paradox that a large cotton crop should bring the South less money than a small one. If the weather is favorable, and 1,000,000 bales of cotton more than are temporarily needed are raised, the result is likely to be that the South, instead of finding itself richer by \$50,000,000, will have lessened its wealth by \$150,000,000. To overcome such conditions, injurious to all interests, it would only be necessary for the planters to store that surplus and take it off the market until the return of a short-crop year should bring about fair prices.

It is the purpose of the Southern Cotton Corporation to issue a receipt that will be considered as good as a United States bank note in any market of the world. The cotton stored in its warehouses will not be moved about from place to place, necessitating extra expense with each handling. The spinner who buys its receipts, whether in this country or in Europe, can call for his cotton whenever he sees fit, and have it delivered to any port in the world. If the farmer wishes his cotton back he can get it at any time upon the surrender of his receipt.

Studying Various Plans.

The Southern Cotton Corporation is not yet ready to give out the details of its warehouse system. It has three plans under consideration: First—To build and operate warehouse, issuing on the cotton its own receipts. Second—To encourage as far as possible the building and ownership of warehouses by local companies and to issue its receipt on their receipt, thus guaranteeing the latter. Third—To cooperate with local companies, furnishing part of the capital invested in each plant, having a voice in the affairs of each constituent company, and issuing its own receipt upon the cotton stored in the warehouses.

The plan of the Southern Cotton Corporation may be any one of these, or it may combine the most acceptable features of all three. It refrains from making or giving out a final decision until the South itself has fully discussed the question. It will take time and patience to solve the problem, and we do not wish to make any mistake or to unnecessarily encroach on what others may consider their vested rights. It is our desire to conform, as far as possible, to general sentiment and serve the best interest of the land of cotton.

It might be well, before I leave the sub-

ject of the warehouse system, to say that the Southern Cotton Corporation claims no credit for originality in this plan. In 1851 a cotton planters' convention was held in Tallahassee, Fla. The same conditions I have discussed were gone over—the glutting of the market in certain months of the year, wide fluctuations, low prices one year and high prices the next. It was recommended that the association should erect or purchase extensive warehouses at certain points in the South with the view to storing of cotton. With the exception that the crop is now larger and the dates are different, one almost might be led to think that the convention was held today to remedy present conditions, instead of more than a half-century ago. It merely goes to show how slow improvements have come in the handling of that commodity.

I have taken up the warehouse feature first simply because it is the broadest. There are other remedies to be effected, and this is along the line of machinery. I am a firm believer in the part mechanics have played in the solution and evolution of our industrial welfare. I believe that America owes more today to the inventor than to her soldiers and statesmen. The inventor and mechanic have worked out our greatest problems. Mechanical improvements, not victories in war nor the wisdom of our legislators, have been most largely responsible for our national development. I do not mean to take away the laurels of any particular class. Our agricultural communities form the backbone of our citizenship. But up-to-date farming would have been impossible had it not been for the inventor. We would still be scratching the ground with one-horse plows, cutting wheat with a cradle and threshing it out with a flail. These improvements are seen in all lines of agricultural works except in cotton. Improved methods of civilization have come, of course, but cotton is still picked by hand. Some day I believe cotton will be picked by machinery. Cotton is ginned today practically as it was in the day of Eli Whitney. The saw-gin is wasteful. This much may be seen when you remember that out of the short crop of last year 198,000 bales of linters must be taken. The saw-gin injures the fiber, cutting it up and lessening its spinning value. A gin that could remove the lint from the seed without effecting such injury would add \$10 to every bale of cotton. Even on a short crop, such as that of last year, the saving would be \$100,000,000. As I have said, there were nearly 200,000 bales of linters, which are worth, possibly, four cents a pound. With a gin that would remove the lint properly from the seed it would mean that last year's crop had been increased just 200,000 bales of cotton, worth 12 cents a pound, instead of that amount of linters, worth a third that sum. The Southern Cotton Corporation has its experts investigating the subject of an improved gin, and it hopes to give to the world the glad tidings that it has found one to fill all the requirements I have set forth.

The Question of Compression.

Then there is the question of the compressing of cotton. After a bale of cotton is ginned it is handled from three to six and in some cases ten times before it reaches the consuming manufacturer. When a bale is ginned it is sent from the ginhouse to a central compress, and there compressed into a smaller package for shipment. I need not dwell upon the expense of handling and rehandling. The items for each bale may be considered small, but in the aggregate for even a 10,000,000-bale crop they represent an enormous total. And it all comes out of the pocket of the farmer. The cotton fac-

tor has made his price to the mill, and he makes the farmer pay the tolls. This re-handling necessitates or rather entails additional sampling, and adds to the city crop, also another small item considered bale by bale, but which last year was estimated to have reached a total of 50,000 bales, equal to about \$3,000,000. The Southern Cotton Corporation has purchased the Whitman bat-bale press, which puts out at the ginhouse a square bale of uniform style and density of 500 pounds, thoroughly covered and so safe from fire that it has been called the "Underwriters' Bale." This compress is so simple in construction that a negro can operate it. It turns out a bale ready for shipment to New England or for export. The Southern Cotton Corporation does not intend to turn this invention into a monopoly. This press will not be operated on a royalty, but, like the ginning and other machinery which may be perfected by the corporation, will be sold at a low price to any ginner on satisfactory terms. I also wish to state that it is not the intention of the corporation to attempt to market the underwriters' bale. It intends simply to sell the press outright, and the cotton merchants of the South will handle this bale just as they do the ordinary square bales.

Sidelights on Speculation.

In the first part of my address I spoke of the evil effects of speculation and the benefits that would result from keeping it in check. I know a little about cotton speculation, and I have experienced at least one or two of its evil effects. I regard cotton speculation or any other form of speculation where a man buys what he does not want or sells what he does not intend to deliver as gambling pure and simple. I realize and admit that the cotton exchange has its province. There must be such places as this where the world's business may be transacted on a broad scale and in an expeditious manner. I admit that the man who needs 5000 or 10,000 bales of cotton cannot go throughout the country buying them in small lots from Tom, Dick and Harry. But too often, and I might say in nine cases out of ten, the legitimate buying and selling is overshadowed by the speculative craze. Here we have a great commodity, more important to the world than any other staple product, and what fixes the price when speculation is active? Is it supply and demand? Is it the amount of cotton on hand and the requirements of the mills? Is it the need of the world for cotton goods? No, I will tell you a few influences more powerful than these, more powerful than a killing frost or hot winds or an August drouth, a wet season or the dreaded insect pests from boll-worm to boll-weevil.

In one of the cotton exchanges there is a black cat. It is a female, but they call her "Nigger Bull." They call her Nigger because she is black, and I'll tell you why they call her Bull. When that cat happens to stroll onto the floor of that cotton exchange there is not a broker in that ring who doesn't bid for cotton. One day last winter she walked through the door and onto the floor and stretched her right hind leg; it was regarded as unusually bullish, and cotton immediately jumped 40 points. The market is good for a 10 or 15-point rise any time the cat comes onto the floor.

Speculators are often too superstitious to be governed by reason. One of the conspicuous members of that class will not buy or sell one bale or commit himself to a new contract if he walks out of his house and catches the moon over his right instead of his left shoulder. He may make up his mind upon leaving the market to buy cotton the next day, but if on his way home he chances to see a white or gray

cat he stays out of the market; if, however, the feline that meets his gaze happens to be black, there is no mercy in his heart for the bears the next day. There is another prominent operator who stops to get his shoes shined in the lobby of the exchange every morning before going upon the floor. He always asks his bootblack whether he shall buy or sell in case he is not strongly committed to one side or the other. And he takes the bootblack's advice. I know of another trader who figures that the rise and fall of the market is purely a chance affair, and he decides his daily operations by tossing a penny. Still another wears a gray suit of clothes when he wants to sell cotton and dark blue when he wants to be successful on the buying side. Another heavy trader, who also plays a good hand at poker, says if he wins at cards the night before he buys cotton; if he loses, he sells it. Another one of these cotton experts keeps out of the market if his toe happens to go over a crack in the floor on which he is walking. I remember a little incident last winter, when one of the prominent traders wished to get rid of a man whose presence he regarded as a bearish influence on prices, but whose absence, according to tradition, never failed to bring about a higher market. He was afraid to buy much cotton as long as the other man was in the ring; hence he paid the other broker's expenses for a vacation merely to get rid of him. Then he stepped in and bought cotton confidently and the market went rapidly upward.

One prominent operator paid \$100 a week to a floor broker for his opinion on the market; the broker is a man of experience, and regarded as an excellent judge of the market. The operator took his opinion and acted in direct opposition to the advice he received. If he was told to sell, he bought. If he was advised to buy, he sold. By following this unusual course he made enough money to build the handsomest theater in the United States. There is another trader who buys cotton when he comes to the market wearing socks of a certain color. On all other occasions he is a noted bear on the staple. Another operator who is considered quite successful never makes up his mind as to what he shall do until he drinks a certain brand of whiskey mixed with ginger ale.

One man who has grown old in the cotton market casts aside all the news from the fields and the mills and goes over into a corner of the exchange and takes a seat. There, with his hands folded and his eyes closed, he communes with the spirits. Fortified by the counsel of his shadowy advisers, he buys or sells. There is a ladder in one of the exchanges which is used for putting up the Liverpool quotations and the estimated receipts for Houston, Galveston and New Orleans. It is said that there is not a broker who can be persuaded to walk under it.

Cliques and Tips.

Then there is the ever-present question of bull cliques, bear cliques, of "deals" and "tips" as to whether there is anything "doing." Jones and Smith may be seen at lunch; immediately the gossips get together, and, regardless of whether the price is too high or too low, they decide that Jones and Smith are going to do something, and they prepare to follow them. Then there is the question of the "technical situation." It makes no difference whether you are going to have a big crop or a small crop, but the traders of a certain commission house who don't know any more about the value of cotton than they do about the transmigration of souls are said to be heavily short. Then the crowd decides they are to be gunned for until they run to cover. Meantime prices are forced up a half a cent a pound and the spinner suffers, while the farmer reaps little value from the temporary boost. Then there are all sorts of wild stories, rumors of failures that hurt the credit of solid houses, trumped-up crop scares, false reports concerning the yield in this or that locality. Of course, these influences have only a temporary effect, but they are demoralizing.

Such are some of the sidelights on speculation in cotton. If you would at least eliminate a portion of these, try to make the price stable and subject to the fewest possible fluctuations.

If you do this you may not read of fortunes made and lost in a day, but you will see a prosperous manufacturing community and the farmer get a reward for his toil. The South will gain its deserved pre-eminence as the happiest and most prosperous section of these United States, if not of the whole world.

BONDED WAREHOUSES FOR COTTON.*

By COL. T. G. BUSH.

While the industrial and manufacturing interests of this country are large and claim much attention, it is a fact that the real prosperity of the country is measured by the success or failure of the agricultural interests. From the time crops of all kinds are planted until harvested the manufacturer, the banker and the merchant are anxiously looking forward to what the harvest will be, and to the extent of the promises of the crops they regulate their affairs accordingly. This is clearly understood when we consider the volume and value of the leading crops. Under normal conditions the wheat crop is 600,000,000 bushels or more, the corn crop about 2,300,000,000 bushels, the oat crop about 800,000,000 bushels, hay crop about 60,000,000 tons, cotton crop about 11,000,000 bales and the cottonseed crop about 5,500,000 tons, aggregating a total valuation of about \$3,040,000,000, to say nothing of the value and importance of the minor crops, such as rye, barley, potatoes, fruit, etc. Considering, therefore, the value and importance of the crops to the success of the business of this coun-

try, the methods of cultivation and marketing cannot receive too much attention. It is with regret that we note the fact that farming in the South is far behind that of the West, so far as the adoption of improved and most economical methods. The result in the West has been, with normal crops, lifting of farm mortgages and giving to the farmers the prosperity which has been reflected throughout the entire country.

Of course, the leading crop in the South is cotton, and we are naturally concerned as to the cultivation of this crop, and the manner of preparing it for the market and marketing the same. Just here I will say that I do not wish it understood that I advocate regarding lightly the importance of the corn crop in the South and other crops which, if properly attended to, will create a diversity in farming that will be profitable. I regret that time forbids my entering into a full discussion of the methods of cotton cultivation in the South, for it must be admitted that economical production plays the greater part in producing net revenue. The manner in which farming lands in the South, as a whole, are preserved and cared for, and

*A paper read before the Alabama Commercial and Industrial Association.

the methods of cultivation, are much to be deplored. The large acreage of worn-out lands in the South is due to criminal neglect, for there is no good reason why the fertility of the soil should not be maintained and improved, while, at the same time, producing from year to year profitable results. The manner of farming in the South for a great many years, and with most farmers of today, can best be likened to a man who makes but one deposit in a bank, yet continually draws against it. The fact that the South produces two-thirds of the world's supply of cotton, and that the quality is such that it is essential for mixture with most of the cotton produced in other countries, makes the cultivation of this article in this country of world-wide importance, and should naturally suggest that its production should be so regulated, or increased from time to time, as demand may necessitate.

Frequent reference is made to the question of labor available for producing cotton in the South, and it probably is true that industrial interests are drawing labor from the farms more rapidly than it can be replaced. But we are inclined to exaggerate this trouble when we fail to consider the fact that two pounds of cotton can be produced where one now grows if the proper attention should be given to the improvement of the land and the best system of cultivation adopted. It is a fact well known to any farmer that fertile soil is more easily cultivated than poor or thin soil. The soil itself offers less resistance to the plow and other mechanical tools used in farming, and the growth of the plant more quickly shades the ground, thus protecting the soil and at the same time preventing the growth of grass and weeds. We often mention the difficulty in picking cotton after it has been made and deplore the absence of some mechanical device for gathering it, but it is a fact that any one experienced cotton-picker will pick 50 per cent. more cotton where the stalk is larger and the fruit more abundant.

Aside from proper cultivation, the question of preparing the cotton for the market and selling it at such times as may give the most uniform and profitable returns is of vital importance. It is a fact that the acreage put in cotton from year to year is not considered seriously from the standpoint of the needs of the world for cotton or cotton goods; therefore, according to the outcome of the crop affected by the conditions of the seasons or other things, there may be a scarcity of supply as compared with demand, or there may be an excess. We do not have to look very far in the past to know the effects proper. Take, for illustration, the crop of 1898—11,270,000 bales. When the average price in New York was six cents it necessitated the selling of cotton in many places in the South as low as four cents and five cents per pound, which, of course, was ruinous to the cotton producer. During the season ending September 1, 1904, with a crop of 10,000,000 bales, or a difference of about 10 per cent. as compared with the crop of 1898, cotton sold as high as 17 cents to 18 cents, with an average of something near 12 cents per pound. You can see, therefore, that with a comparatively small percentage in the difference of production the price fluctuated as much as 200 per cent. Notwithstanding the fact that the views of many sellers and buyers are affected by the predictions and guesses of so-called experts and by the estimates of the government as to what the total crop will be, it is true that the general cotton interests base their views more particularly on actual receipts. Statistics show that with few exceptions the lowest prices for cotton have prevailed

in the months of October, November and December, due to necessity, in most cases, by reason of the farmer having to sell his cotton in order to meet his obligations for the money and supplies obtained to make his crop, and due also to lack of facilities to take care of his cotton with safety, even if he should be able to hold it.

In other words, there is practically no system in the South by which the farmer or the merchant can store his cotton safely and on an economical basis and obtain such warehouse receipts as will enable him to use such receipt for providing funds to meet his obligations. Therefore, in the majority of cases the farmer or country merchant is compelled to sell his cotton at the best price obtainable, irrespective of his judgment as to what the future market may be. The experience from these conditions has been that the comparatively small surplus forced on the market has caused a low average in price throughout the entire season, and many times has brought distress to the farmer and to his creditors. The effect of such conditions is not new, and we learn through publication in the Manufacturers' Record of Baltimore recently that as far back as 1851 the Southern farmers had under consideration some plan to relieve them of this great disadvantage, and they concluded, as thoughtful and intelligent men of today think, that the only remedy was a system of bonded warehouses in the most important centers, particularly at the gateways in the South, whereby cotton-planters, merchants or cotton-buyers could store their cotton at a reasonable rate of storage, low rate of insurance and obtain such a guaranteed receipt as to make it as good as gold as a collateral, thus guaranteeing the lowest possible rate of interest. It may be that lack of funds, as well as concentrated effort, has been the cause of delay in furnishing these facilities, but we have reason to believe now that the matter is under consideration by thoughtful men of abundant means, and that steps will soon be taken to provide this much-needed facility.

I think it safe to say that means whereby the farmers will not be forced to sell their cotton, except at a fair and remunerative price, will be worth to them probably an average of \$10,000,000 to \$30,000,000 per annum. These advantages will not only be valuable to the farmer, but to the buyer who supplies the manufacturer, and the manufacturer as well, for a uniform price or a market without violent fluctuations is to the best interest of all departments of the cotton business. Violent fluctuations in cotton goods are as objectionable to the manufacturer as such changes in the price of raw cotton are to the producer.

It is also a fact that a proper system of warehousing cotton, so that it may be used safely as collateral, will be of great benefit to banking interests and will cause an influx to the South of a large amount of money to be had at cheap interest; so it appears, from all standpoints, that bonded warehouses, properly conducted, will be beneficial.

Some objections have been made to the proposed plan of warehouses especially provided for the storage of cotton and the issuance of negotiable receipts on the ground that it would encourage speculation on the part of planters and also furnish opportunity for the parties controlling the warehouses to control the cotton, and thus be able to cause a corner in that product for any given period. These objections do not appear to me to be well taken, and probably are made by those who have not thoughtfully considered the subject, or in cases where manufacturers and buyers are satisfied with their present arrangements and would not care to see better general facilities offered. I do not

suppose it has been thought for a moment that the co-operation of farmers would be sought in a move of this kind with a view of united action. It is not at all probable that all farmers, merchants or buyers will have the same views as to the prices of cotton, and, therefore, would act on their own judgment, but it would furnish facilities for those who would have faith in holding their cotton for such time as their judgment would dictate to sell it. In other words, it would prevent the forcing on the market of cotton against the judgment of the producer or holder, and would thus, without doubt, have a tendency to make prices more uniform throughout any given season. As I understand the present situation, it is the speculator, or syndicate of speculators, who are able to control funds for the purpose of storing spot cotton and producing a corner, thus demoralizing the markets and the business of the manufacturers. It is desired that the farmer, or anyone else who chooses to hold his cotton in large or small amounts, shall have opportunity of obtaining cheap money with a collateral of this kind, covering a commodity that will keep indefinitely and is as good as gold on the market, and the Southern banker will not only find opportunity to use to advantage his surplus funds, but money will flow to such centers through the local banks where such good collateral can be obtained.

It is not supposed that any corporation or number of corporations or individuals who may enter into the warehousing business will do so from philanthropic motives, but if they are business men they will expect a fair and reasonable return on their investment, to which they are certainly entitled. It is my belief that the need of warehouses of this kind will be sufficiently appreciated to secure local co-operation in establishing warehouses at the various important centers or gateways. A method of warehousing cotton and using the receipts for collateral would not be at all novel, but it would be simply furnishing to the producers and handlers of cotton just such facilities as have for years been offered to the producers and dealers in wheat and other grain in the West. The elevator system for handling grain has proven a great boon to the farmer and the grain merchant.

It is stated on authority that the corporation which is taking active measures looking towards the establishment of cotton warehouses in the South is also providing for a method of compressing cotton at the gin to a density satisfactory to the shippers. With the cotton properly wrapped there will be a great saving if this plan proves practicable. The question of use of a gin for producing a better staple is also under consideration, and if the gin proposed to be used can accomplish what is claimed for it, it is evident that the quality of cotton will be improved as much as one cent per pound, which alone would add to the value of the Southern crop \$50,000,000.

The violent fluctuations in the price of cotton and the belief on the part of foreign buyers and manufacturers that under present conditions they are subject to such manipulations of the cotton market as American speculators and speculating syndicates may see fit to bring about, has caused renewed agitation in Great Britain, France and Germany concerning the question of colonial cotton culture. Many have said that this agitation amounts to nothing, as American cotton must prevail and control the markets. It may not be wise to put aside this question without some serious consideration, for on investigation you will at least conclude that the British Cotton-Growing Association is somewhat in earnest in its experiments in Sierre Leone, and it is stated that very

recently it has received from the Province of Lagos, West Africa, a sample shipment of 30 tons from this season's crop which is pronounced equal to the best American upland in both length and quality of fiber. It is also well known that France has likewise a Colonial Cotton Association, which is experimenting in the Soudan with encouraging success, and samples received from there are reported as having reached approximately the grade of Egyptian cotton. This grade of cotton, as is well known, is adapted to the mercerizing process, which has lately consumed so much of the Egyptian staple. It is left, however, to Germany to prosecute with most vigor the question of colonial cotton supply. It is charged in the German press that the American cotton market is at the mercy of groups and combinations of conscienceless speculators, who by their manipulations, put prices up and down to suit their own purposes. They also criticize the government reports as being often untrustworthy and misleading. Therefore, in consequence of these troubles arising from these irregularities, they claim the German manufacturers have sustained serious loss and frequent interruptions in their business. Germany, as well as other countries, is also impressed with the fact that with the growth and expansion of American cotton manufactures, particularly in the South, there is a steady increase in the percentage of the total crop being consumed in this country, leaving a smaller surplus to export from year to year to the non-cotton-growing countries. Germany, therefore, is making her experiments in East Africa, and has in view the emancipation of her spinners and weavers from American dominations. Of course, for the present these improvements are in their infancy, and may not appear serious, but is it not reasonable to suppose that in the course of time climate and soil satisfactory to the growth of cotton in other countries will be found and suitable labor secured for cultivation of the cotton staple? It is probably well known that through the German consul at Galveston arrangement is in progress to send over and educate at the agricultural schools and on plantations in Texas a number of young Germans, who will sign contracts to spend a given number of years as superintendents of plantations in German-African colonies.

It appears to me, when we consider all conditions referred to attending the present methods of cultivating cotton, the handling of same and the possibilities which may be reached, that our agriculturists of the South have not been living up to their opportunities for largely bettering their condition. In this connection I cannot refrain from referring to the fact of so little progress having been made along the line of improved methods of cultivating and handling cotton is due to the flow of population from the farms to the villages, towns and cities. We can never expect the results that should be obtained until more intelligent and businesslike methods are adopted on the farms. To this end every encouragement should be offered to many of the young men to remain on the farms, and in order to qualify them for success the question of strictly agricultural college for the boys of Alabama should be raised and pressed until opportunities are furnished for training them for successful farming, just as we provide polytechnic and law schools for those who wish to qualify themselves for other work. The Alabama Commercial and Industrial Association cannot render a better service to the people of this State than to offer every possible encouragement along the lines suggested.

MANUFACTURERS INVITED TO THE SOUTH.

Characteristic Spirit Shown by the Alabama Commercial and Industrial Association in Annual Convention.

[Special Correspondence Manufacturers' Record.]

Anniston, Ala., September 27.

Thoroughly characteristic of the spirit which has in the past quarter of a century brought the South to its present stage of progress, and which is destined to advance the South more rapidly than ever before, was the action taken here last week by the Alabama Commercial and Industrial Association in annual convention. Before that body, which is representative of the progressive business bodies in the cities of the State, a number of inspiring addresses were made bearing upon the material interests of Alabama and upon plans for furthering them. These addresses were capped by a number of telegrams sent to leading manufacturing interests in the North, as follows:

"Draper & Co., Hopedale, Mass.:

"The commercial organizations of Alabama in annual convention invite you, as the largest textile machinery house in America, to consider the pre-eminent advantages of this State as a location for making textile machinery. Producing 1,000,000 bales of cotton, while adjoining States each produce as much, we have 4,000,000 bales immediately tributary to our cotton mills. Three of your largest corporations have lately invested \$3,000,000 in building branch mills in Alabama. Here, where we have the iron, the cotton, the coal and the timber, is the most inviting place in the world to build textile machinery. We invite you to come down and investigate for yourself."

"Crompton-Thayer Loom Works,

Worcester, Mass.:

"The cotton mills of the world are fast coming to the cotton fields. Already three of New England's largest mill corporations have built mills costing \$1,000,000 each in Alabama, while other Southern States have captured others. The South, as the world's cotton producer, has demonstrated that it will also become the world's cotton manufacturer, and the field for expansion both in production and in manufacture is practically without limit. Where the cotton mills are, there should be the textile machinery plants. Here, too, is produced the highest grade of charcoal and foundry iron, and no doubt much of the machinery you sell to Southern mills is made out of iron produced in Alabama. The commercial organizations of Alabama in annual convention ask you to consider these facts and then locate a textile machinery plant in this State. Come thou with us, and it will do both of us good."

"American Locomotive Co.,

New York City:

"The South has over 60,000 miles of railroads, or nearly one-third the railroad mileage of the country, but before its mileage is in proportion to that of many Western and Northern States it must double or quadruple this mileage. It has the greatest natural resources for supplying a dense population and the creation of wealth of any equal area in the world, and Alabama is the heart of the South. In all this vast territory, stretching from the Potomac to the Rio Grande, there is but one important locomotive plant, and that is yours at Richmond. Its remarkable success proves what the South can do in locomotive building. We invite you to build a great locomotive plant in this, the central State of the South, and the predestined center of the world's iron and steel interests. Here you can find the highest grades of iron and steel made, and yet the cheapest. Here you can find a perfect climate

and every advantage which nature could provide. Moreover, the development of Mexico and South America and the construction of the Panama canal all add to the opportunity for business of a locomotive plant in Alabama. The commercial organizations of Alabama in annual convention assembled invite your fullest investigation."

"Fairbanks Scale Works, New York:

"The rapid increase in industrial interests is making a tremendous increase in the demand for scales. Doubtless much of the iron used in your scales sold throughout the South comes from Alabama. Why not locate a factory where your raw materials and your market are together? Alabama, the coming iron and steel center of the world, through its commercial organizations in annual convention, asks your investigation of these facts. We offer to you and all other manufacturers a combination of advantages—coal, iron, cotton, timber, climate, water-power and agricultural capabilities not equaled elsewhere on earth. If weighed in the balance, we will not be found wanting."

"Joseph H. Hoadeley,

Pres. International Power Co.,

74 Broadway, New York:

"The commercial organizations of Alabama, now in annual convention, beg to invite your attention as a great leader in the industrial development of America to the remarkable advantages and the bright future of this State. The vast industrial enterprises in New England and elsewhere, which owe their existence to your genius for organization, must of necessity look to the South more and more as the source of raw materials, and at the same time find here an ever-widening market for their product. Alabama can offer you unequalled locations for machinery works, for locomotive plants or any other line of industrial development. This State is already making one-half as much pig-iron as the United States made in 1880, and is mining more than one-fourth as much bituminous coal as the United States mined in 1880, and yet we have only started our development. The future is bright with promise of wealth based on coal and iron greater than that of Pennsylvania, and to this we add cotton and timber and other products. The late Abram S. Hewitt of your city shortly before his death said that Alabama would dominate the basic steel industry of the world. Come and investigate, and you will find that of Alabama's advantages the half has never been told."

"American Supply Co., Providence, R. I.:

"As one of the oldest textile machinery houses in America, you can but appreciate the wonderful growth of textile mills in the South. Twenty years ago the South had 600,000 spindles, representing \$20,000,000 capital; now it has 8,000,000 spindles, representing \$200,000,000 of capital. Alabama is taking a leading part in this amazing progress, and with its vast iron interests should be an ideal location for textile machinery plants. The commercial organizations of Alabama in annual convention extend to you a hearty invitation to investigate the wonderful resources of this State, to take part in the broadest upbuilding, and in this way the vast wealth which must inevitably be created."

"President British-American Mfg. Co.,

Providence, R. I.:

"For your Corliss engine works, your ordnance plant; in fact, for all your ma-

chinery interests into which iron or steel enter as raw materials, Alabama can provide the highest grade of charcoal and foundry iron and of basic steel without the heavy freight charges New England must pay. As a market for your products, the rapidly-growing manufacturing interests of the whole South must necessarily furnish an ever-increasing demand. Three of New England's largest cotton-mill corporations have lately spent \$3,000,000 in building large mills in Alabama, and others must follow the inevitable Southward trend. In this State are concentrated vast supplies of coal, iron and timber; here we raise 1,000,000 bales of cotton a year and adjoining States raise 3,000,000, giving our cotton mills an available supply near at hand of 4,000,000 bales. We are but at the beginning of the day of industrial development and prosperity. Alabama is already mining twice as much bituminous coal as the United States mined in 1880 and twice as much pig-iron as the whole country then made. We are making nearly half as much pig-iron as the United States as late as 1880. The commercial organizations of Alabama in annual convention invite you to come down and investigate, and we will show you the cheapest iron and steel-making points in the world, the best place to build engines or textile machinery or guns for this country and others—and the construction of the Panama canal means such an opportunity to reach the Pacific coast and Asia as never before existed and as never can

exist in New England. If you want to be in the coming center of the world's activity and wealth, come to Alabama."

In prompt reply came the following:

"Providence, R. I., September 23.

"Alabama Commercial and Industrial Association, Montgomery, Ala.:

"As the owners of the Corliss Engine Works, the American Ordnance Works and the Wheelock and Greene Engine, as well as other large manufacturing interests, I have watched with great interest the remarkable material advancement of the Southern States. I congratulate the South on what it has done, but I feel like saying that all that you have accomplished is but a slight indication of the brilliant future before you."

"The story of development, as published from week to week in the Manufacturers' Record, has awakened in this section, as throughout the world, the deepest interest in the prosperity of your section. I am tremendously impressed with your progress and appreciate your invitation, and am always ready, as are those associated with me, to make the closest investigation of the relative advantages of different sections for manufacturing. Our interests in New England are so great, however, that we do not feel that we can at the present time come to a final decision as to our ultimate location."

"GEORGE W. HOADELEY,
"President American & British Manufacturing Co."

CHARLES A. LIEB'S VIEWS ON THE AUTO-BUS.

[New York Correspondence Manufacturers' Record.]

Col. Charles A. Lieb, who was consulting mechanical engineer for the General Electric Co., who as an inventor has achieved the highest distinction, who rebuilt the street-railway system at Washington, D. C., and whose researches in the field of auto-propulsion have been more thorough and far-reaching than those of any other American engineer, after reading the predictions of another engineer, printed in the Manufacturers' Record of September 1, concerning the passing of the street railway, today gave me his views concerning the vehicle of the near future for passenger transportation in large cities. I asked him whether or not he thought the opinions expressed in that much-discussed interview were in the main sound.

"The auto-bus," said Colonel Lieb, "will doubtless soon enter the field of city passenger traffic. The engineer who was quoted in the Manufacturers' Record of September 1 was absolutely correct concerning the amounts of money lost in the re-equipment process that has been going on in street-railway building. The increase of traffic, however, has permitted net earnings to increase to such an extent that the 'scrapping' of power stations and equipment for more modern apparatus has not been a very serious problem in the financing of such companies. Nevertheless, it is safe to say that six years has been the average life of the various power stations. The cost of track maintenance, and especially the enormous charge for maintaining pavements, is so heavy a strain, and no doubt will become heavier in the future, that the problem of maintaining street-railway systems on any satisfactory earning basis as financed today may prove seriously critical within a very short time by reason of the inevitable competition of the auto-bus. This will go hand in hand with better street-paving, for which public sentiment is now making so vigorous a demand that municipal authorities cannot resist it. It has thus occurred that the street-railway systems

have been compelled to lay the foundation for unexpected competition by putting down nearly everywhere between the rails, and in many cities from curb to curb, a first-class pavement on all the main thoroughfares. The auto-omnibus can be operated as a vehicle of commerce over such pavements at a much lower cost than street cars, when interest on the original outlay, the charging off the cost on abandoned machinery and equipment, and the cost of continual re-equipment and the maintenance of pavements which the street-car companies are required to keep in repair, are all included in the calculation. In other words, the burdens that have been imposed upon the street-car systems are too great to make practicable competition with trackless auto-vehicles, which, free from any kind of handicap, are in the running side by side with every other kind of vehicle, private or public."

"Why has it not been possible to introduce generally the auto-bus before now?"

"Principally on account of the lack of properly-paved streets, and secondly, the lack of a satisfactory vehicle the maintenance of which could be brought within limits justifying a charge of, say, 10 cents a vehicle mile. This latter condition seems now to be within reach, as a result of knowledge gleaned from the expenditure of millions of dollars on touring cars and other auto-vehicles in this country as well as abroad. The solution of this problem has engaged the earnest thought of the best engineering talent in the world. Indeed, I venture to say that during the last three or four years there has been more painstaking effort in the direction of the discovery of economics in auto-propulsion than in any other field of inventive ingenuity. No less a man than the great Edison has spent years in endeavoring to produce a storage battery for automobiles; and there are perhaps 10,000 other engineers working with a view to perfecting the automobile. I might add that some of the experiments that have been brought to my attention,

recently in the direction of primary or semistorage batteries give promise of practical utility.

"Then, too, a great deal of inventive talent is being devoted to safety appliances which will largely eliminate the danger equation from the automobile operation. It is claimed that the extensive use of auto-buses for passenger traffic will be dangerous to the pedestrian, however much it may contribute to the safety of the passenger. The general public sentiment against automobiles is justly due to the reckless high-speed operation of private touring cars, not only in the city of New York, but all over the country. You must bear in mind that the auto-bus will not, like the racing machine, run through the streets at the rate of 40 or 50 miles an hour, but will move under a complete control at about eight miles an hour. However, the subject of danger is much exaggerated, as statistics will show. Although automobiles have been in use only four years, I believe there are already something like 8000 of them now operating in the city of New York alone. This is probably three times the number of street cars that can be practically operated simultaneously on the surface lines. The accidents in the city streets proper caused by automobiles are very few compared with the accidents caused by street cars and horse-drawn vehicles. The cab of today is more dangerous to the pedestrian than will be the properly-designed auto-bus of the future."

"Since you think the time has come when the auto-bus may be used as a vehicle for passenger traffic in competition with the street cars, are we to infer that in your opinion it only remains to put the auto-bus into actual operation on a large scale?"

"Unquestionably. With the inventions which have already been proven out and demonstrated as practicable, the automobile system is today, wherever the pavement is modern, in a position to compete, car for car, with any known traction system, alike on the score of systematic operation, economy and maintenance of schedule. The question of 'getting there,' or maintenance of schedule, is one that has attracted a great deal of attention, many laymen and some engineers contending that in a city like New York it would be impossible to fix and maintain a given schedule for auto-buses running between the lower part of the city and the upper. My answer to this is that the street cars, although they have theoretical schedules, find it impossible to maintain them in practice. The auto-bus could certainly follow any given street car and maintain any possible schedule that it (the street car) maintains; while it must be plain to everybody if the street car, for any of the many reasons well known to us, is blocked at any point, the auto-bus can run around it and proceed. And so it can maintain its schedule to better advantage than the car that has to stick to the track."

"But," I suggested, "some street-car transportation men have taken the ground that by coming to the curb to get passengers the auto-bus would lose so much time as to be put to very serious disadvantage in keeping up with the street car."

"Even with this apparent disadvantage," Colonel Lieb replied, "in respect to speed, the auto-bus will be able by reason of its greater mobility to pass enough street cars where the way is clear to more than compensate for time lost in deflections to the curb to take on passengers. It is well known in street-car service that a lady will walk out to the track, and if, as the car is coming, she should see a wagon ap-

proaching in the same direction, she will walk back to the sidewalk, and the car will be compelled to wait until the wagon passes. It is also noticeable to the average rider on street cars that when a lady wishes to get off, if a wagon should happen to be coming in the same direction, she will stand on the step or platform of the car and wait until the wagon passes, thus causing considerable delay which would not occur with the auto-bus, as it would go up to the curb. Therefore, taking everything into consideration, the handling of passengers from the sidewalk will probably promote rather than hinder the maintenance of schedules.

"There is another factor in a city like New York which perhaps up to the present time has received but scant attention. In this metropolis more goods and merchandise are no doubt handled through Broadway than over any other thoroughfare in the world. It is limited in width, over a third of it being occupied by street-car tracks. Steps should be taken to limit the transportation of merchandise on Broadway to business originating on or destined to that thoroughfare, or else the commercial interests of New York will be seriously impaired. Here we have a problem for the commercial organizations of New York to immediately take up and solve. Many hundreds of thousands of dollars are lost today through the apparently unnecessary detention of traffic on Broadway. These constant detentions make the cost of local transportation greater in New York than in any other city in the world, and twice as much as it ought to be under a scientific readjustment of the purposes to which that thoroughfare should be devoted. Our large factories are all equipped with traveling cranes so that merchandise and machinery can be picked up and economically transported from one part of the factory to another or on to cars or ships. But on Broadway everything seems to clog and obstruct the movement of merchandise and to delay passenger traffic. Thus a heavy and unnecessary tax is imposed on the business interests of New York. It was apathy or ignorance of this general principle that caused New York to lose so much of her export trade which was deflected to Baltimore, Norfolk and Newport News.

"It is certainly very evident that if the street-car tracks were removed from Broadway in this city and automobiles should replace both street cars and horse-drawn vehicles for passengers and freight traffic, the cost of transportation would be very materially reduced. I am inclined to think Mr. A. D. Proctor Smith is right in saying that the capacity of Broadway would be increased if there were no street cars. Not only would expedition and despatch be promoted, but the number of accidents would be reduced. So immense is the growth of the traffic in this city that the next move on the part of the traction companies here will probably be to use both tracks on Broadway for downtown traffic from 7 to 9 A. M. and for uptown traffic from 3 to 7 P. M. The cars coming down in the morning on Broadway could be sent back on other parallel streets, and vice versa. The same scheme may ultimately be adopted on the Elevated. This arrangement of north and south-bound traffic should be made to apply to all vehicles on Broadway. It would not only increase capacity of the street railways, but facilitate every kind of traffic.

"Concerning the passing of the horse, I think I am safe in saying that in 10 years the boards of health will make regulations which will abate a deplorable and dangerous nuisance which the public has been obliged to tolerate for generations in all the cities in the world."

"What style of auto-vehicle do you think will be adopted for this mode of transportation?"

"Personally, I am convinced that the electric auto-bus for passengers and the electric truck for freight offer the only solution of the problem. However, some engineers think that the gas-engine automobile, built on lines somewhat similar to the popular touring car, will be adopted. The electric vehicle is not only clean, simple, noiseless, safe, non-explosive, but at the same time the man who today drives a horse-truck can operate an electrical vehicle. But with the gas machine the man would have to have mechanical adaptability and be specially trained. A different standard of driver would be required, to wit, a mechanician, thus increasing the cost of operation. The teamsters of New York can readily be converted into motor-men on electric vehicles. The result would be an elevation of labor due to shorter hours, greater cleanliness and higher wages, as the time now devoted to grooming and feeding horses could be used for operating the vehicle. As to the size of the auto-bus to be operated in this city for passenger traffic, that would depend upon the route selected. On a crowded thoroughfare like Broadway I should have a short and narrow vehicle with large wheels and non-projecting hubs—one that could turn in and out and around promptly, and designed to carry, say, about 20 passengers inside. In the upper part of the city passengers could be carried on the roof as well; but in the lower part of the city I think this would be impracticable, as too much time would be wasted by passengers climbing up and down."

"What is your idea of the possibility of operating auto-buses on the cross-town asphalt streets?"

"Many routes could be selected which are not covered now in any way, and in my judgment could be made to pay well; for instance, a line between the Pennsylvania station, at the foot of 23d street, and the Grand Central Depot, and a line from there to the Long Island Ferry, at 34th street. In fact, you could pick out innumerable short routes that would be profitable at a three-cent fare. Routes could be arranged to connect with the subway and the Elevated and transfer to these for long-distance rides."

"What do you think of the auto-bus as a popular pleasure vehicle—I mean for the plain people who have to economize?"

"The 'sightseeing' business is in its infancy, providing a new source of pleasure to the general public. The auto-bus is the only economical vehicle to supply this new and popular demand. The auto-bus would also find a great deal of business for private parties, not only in the evening, but during the day. Special rates could be made, for instance, during slack hours of business for Sunday-school excursions into the suburbs, the vehicle returning to town for other business and going back for the excursionists later in the day. In this way the machine could be kept in operation from 16 to 20 hours out of the 24, which, of course, is impossible with the horse."

"The possibilities for the auto-bus in Brooklyn and the outlying districts, including Coney Island, are almost unlimited. Imagine, for instance, a handsome auto-bus line operating between 59th street and Fifth avenue, Manhattan and Coney Island, at 50 cents per passenger for the round trip. With the use of the economical apparatus already proven out, such a service could be made profitable. Then, too, there is a great future for the electric truck. In the lower part of New York city the average haul for coal used in our large buildings is about 30 cents a ton-mile, and at this rate there would be

more profit for the auto-truck than for the vehicle drawn by horses, because a horse ought not to be worked more than six hours out of 24, while auto-trucks could be operated 24 hours with shifts of men."

"Perhaps I may be too enthusiastic over the possibilities of the automobile; nevertheless, I intend to devote my future time and energy mainly to its development. It is my opinion as an engineer that if every automobile factory in this country could be run on full time, building standard auto-buses suitable for urban and suburban traffic, there would be found profitable uses for all of them as fast as they could be turned out."

"Will there be any substantial reduction in the cost of such vehicles?"

"The tendency is already in that direction. During the past five years practically all the energy of manufacturers in this field has been devoted to designing and building touring cars. There are probably in existence today in this country a hundred different types of cars, each manufacturer making a limited number per annum and changing his model each year, making the cost of production excessively high. Now, in the case of the auto-bus, if all the factories in the country would manufacture from exactly the same model, so that each part would interchange with every other part, the first cost of the vehicle would be materially reduced, and its maintenance, as compared with the cost of maintenance of the automobiles of today, would be almost negligible. For passenger transportation the public now insists on rubber tires even for operating on asphalt. It is surprising to see the number of rubber tires on buggies on country roads. I mention this to illustrate the tendency of the country. The rubber-tire problem in the auto-vehicle has been a very serious one, owing to the excessive cost per mile, but this has been materially reduced and great improvements as to durability have been made. The company that would operate an extensive bus line in a city like Greater New York would of necessity manufacture its own tires, since by the addition of a very small amount of new rubber it could take its old tires and remodel them, and in this way get renewals at a very small cost compared with the methods now in vogue. Since my early experience with automobiles I have always worked toward large wheels, and it is noticeable in the later designs of vehicles that all manufacturers are tending that way. Although the first cost of the rubber is higher for large wheels, the maintenance of the tire is very much less. In vehicles for transporting coal, ice, ashes and heavy merchandise I believe it will be quite practicable to use iron tires by making wheels as large as six feet in diameter, thus eliminating the rubber tire for this sort of service, and thereby not only reducing the first cost of the vehicle, but also that of its maintenance."

"When such a system expands, do you look for a three-cent fare for passengers going short distances, say one or two miles?"

"Under no other system can the public ever expect the three-cent fare in New York. As the traffic increases the proportionate cost of carrying passengers per mile decreases. In a few years there should be in New York auto-buses carrying passengers at two cents for a mile or less, three cents for two miles and five cents for the round trip across town."

"I have been told that the cost of power for auto-buses and similar vehicles designed to carry 16 to 20 passengers has been reduced to two cents per vehicle mile. Is that a safe figure to use in calculating the cost of operating these vehicles in com-

parison with the cost of operating street cars?"

"My investigations lead me to believe that the cost of power will be between two and three cents per vehicle mile, and with the perfected modern oil engine it may perhaps be brought below the above figure."

It is already low enough to enable the auto-bus to carry passengers at a profitable rate so soon as such a system can be extensively installed."

THOMAS P. GRASY.

New York, September 27.

BUILDING AND LOAN ASSOCIATIONS.

The Means for Co-operative Savings by Southern Working People.

By D. A. TOMPKINS.

[Written for the Manufacturers' Record.]

CHAPTER VII.

State Laws, Charters, By-Laws and Reports.

Every State should have a special law relating to building and loan associations. These laws should be in some respects similar to the laws relating to savings banks. Provision should be made for the inspection of the accounts of building and loan associations and their publication similar to those provided for savings and other State banks. It should be provided that the form of title "Building and Loan Association" should be exclusively used by associations which are purely mutual. Any corporation undertaking to do a savings business not wholly on the mutual plan should be required to be known as a bank, and not as a building and loan association. The law should require the associations to pay the cost of inspecting their books and of publishing their statements, but should not require any other tax. This is not because the building and loan association should be exempted from paying taxes upon any assets it owns not otherwise taxed, but because the building and loan association in reality never owns any property except in the event of having to foreclose a mortgage on a house. In such a case, of course, taxes would be put upon the real estate. The association as ordinarily operated, however, simply acts as an agent for the members, receiving the instalments from each of them, and turns the aggregate over to one member to build a house or for other purposes. Therefore, as quickly as the money is paid in by the various members, it is promptly paid out on a loan and goes into real estate or some other property which is taxable. The association is simply a legal entity. It is an instrumentality by means of which a great number of persons may pay in small sums and have the aggregate paid out to individual members in succession until each member shall have received the par value



\$2500 DWELLING; PAID FOR IN 6½ YEARS. DUES PER MONTH \$5; INTEREST \$12.50; TOTAL \$37.50. LOT NOT INCLUDED.

for his shares. The building and loan association in reality charges no interest. The word interest is used very much as the word current is used in connection with electricity. When any one member gets the amount of his shares at par before he has finished the payments and before a number of other members have received their settlements, the member receiving his money in advance is required to pay an additional instalment to equalize his use of the money in advance of that received by others. It is generally called interest, but it is not interest, because it does not diminish with each instalment payment, but is fixed at a sum or percentage that equalizes the use of the money by those who have received it with those who have not received it.

It is very important in the interest of safety that the law of every State require foreign or interstate associations to make a deposit with the State treasurer for the security of stockholders, the same as is now required by insurance companies for the safety of policy-holders. The greatest injury to the building and loan association business has been that done in the State by corporations calling themselves building and loan associations, but which in reality were corporations operated for personal profit. Sometimes it is provided that the profit may be legitimately made, but in many cases the non-local institutions, commonly called State or interstate associations, have every semblance of being properly organized, and the personal profit is made by their misconduct. It would probably be just as well if the restrictions upon so-called interstate associations were made sufficient to prohibit their operation. The reputation of the home or local institutions should not be hazarded by permitting the operation of corporations from other States, except under severe restrictions for procuring the safety of the money and the safe conduct of the business.

It should be provided that the par value of the shares shall be \$100, and that the instalment payment shall be 25 cents per week, or \$1 per month.

The by-laws should in all cases provide that loans shall be made only upon real estate upon first mortgage. The amount allowed to be loaned should be no more than the net value of the house, leaving the lot as a margin. Three-quarters the value of the entire property might be a good rule.

Loans should also be made on the stock of the association. Ninety per cent. of what had been paid in at any time would be a fair loan on the stock of the association.

Loans should always be made in the order in which they are applied for. The income of the association is generally very accurately known, and when the loans are made in the order of application the secretary and treasurer can estimate very accurately about when any one applicant would get his money. Formerly loans were made by putting the money up for sale on a discount basis; whoever offered to suffer the biggest discount on the amount asked for would get a loan. In the past some associations have fixed an even discount. These premium discounts or regular discounts are all wrong. Each borrower should be loaned the full amount on his stock at par, without deducting premiums, discounts or other diminutions. The provision should be for the utmost simplicity—nothing but the payment of weekly or monthly dues, the loaning of the money to the full par value of the shares and the fixing of an interest rate, or an additional instalment standing for an interest, and a very moderate fine, say five cents per share for failure of prompt payment. Sometimes associations make their par value \$200. This simply requires longer for a series to run out, and is of no particular advantage.

Below there is submitted some statements of building and loan associations operating in the current way of starting a new series once each six months, of having shares at the par value of \$100, charging an interest rate of 6 per cent. and requiring about six and one-third years to run a series to maturity with payments at 25 cents a week:

THE MECHANICS' PERPETUAL BUILDING AND LOAN ASSOCIATION OF CHARLOTTE, N. C.

Officers: S. Wittkowsky, President; R. H. Jordan, Vice-President; R. E. Cochrane, Secretary and Treasurer; C. H. Duls, Attorney.

Directors: S. Wittkowsky, R. H. Jordan, A. E. McCausland, J. H. Wearn, A. C. Summerville, C. Valaer, H. G. Link, Dr. R. L. Gibbon, W. W. Phifer, A. L. Smith, R. F. Stokes, R. E. Cochrane.

TRIAL BALANCE, FEBRUARY 29, 1904.

Assets:	Liabilities:
Loans.....	\$547,920 00
Interest on matured stock.....	546 27
Discount on advance payments.....	1,513 75
Expenses.....	1,170 58
Taxes.....	1,423 97
Profits paid on withdrawals.....	495 00
Withdrawals.....	14,243 00
Forfeitures.....	15 00
Matured stock.....	39,803 00
Office furniture.....	1,065 92
Insurance premiums.....	59 63
Cash in office.....	3 02
Dues unpaid.....	3,555 50
Interest unpaid.....	456 48
Fines unpaid.....	480 00
Total assets.....	\$612,752 12
	Total Liabilities.....
	\$612,752 12

42D SEMIANNUAL REPORT FOR SIX MONTHS ENDING FEBRUARY 29, 1904.

Assets:	Liabilities:
Loans at beginning 42d term.....	\$444,590 00
Loans this term.....	103,340 00
Total loans.....	\$547,930 00
Deductions:	
Loans repaid.....	\$36,420 00
Loans discharged by matured stock, 30th series.....	13,200 00
Present balance loans.....	\$498,310 00
Discount on advance payments.....	1,513 75
Office furniture.....	1,065 92
Insurance premiums paid.....	59 63
Cash in office.....	3 02
Dues unpaid.....	3,555 50
Interest unpaid.....	456 48
Fines unpaid.....	480 00
Total dues.....	\$476,017 25
Deductions:	
Dues withdrawn.....	\$14,243 00
Dues forfeited.....	15 00
Dues to matured stock, 30th series.....	33,024 00
Dues overpaid, 30th series.....	3 00
Total dues.....	47,295 00
Net dues to stock account.....	\$428,722 25
Dues unpaid.....	3,555 50
Total dues paid and unpaid.....	\$432,277 75
Profits at beginning 43d term.....	\$41,663 22
Interest this term.....	\$14,490 38
Less interest on matured st'k, 30th series.....	546 27
Fines.....	358 75
Transfer fees.....	8 50
Release fees.....	70 00
Membership fees.....	426 25
Profit and loss.....	15 00
Total profits.....	\$56,455 83
Deductions:	
Expenses.....	\$1,170 58
Taxes.....	1,423 97
Profits paid on withdrawals.....	495 00
Profits to matured st'k, 30th series.....	6,766 00
	9,855 55
Profits to stock account.....	\$46,600 28
Interest unpaid.....	456 48
Fines unpaid.....	480 00
Total dues and profits.....	\$479,814 51
Matured stock.....	21,346 25
Bills payable.....	4,274 54
Total assets.....	\$505,435 30
	Total Liabilities.....
	\$505,435 30

TABULATED STATEMENT OF EACH SERIES.

Number	Number	Number	Profit	Value of each	
of series.	of shares.	of years in force.	Amount paid per share on books.	Withdrawing share, including profit.	Value of each series.
31	462	6	\$78 25	\$14 69	\$6,928 28
32	541	5½	71 75	12 37	84 12
33	622	5	69 25	10 21	75 46
34	733	4½	58 75	8 27	49,125 66
35	1,074	4	52 25	6 64	58 79
36	738	3½	45 75	5 01	2,500 00
37	1,177	3	39 25	3 68	50,528 61
38	1,024	2½	32 50	2 54	35,890 96
39	1,194	2	26 25	1 64	33,390 66
40	1,147	1½	19 50	91	23,410 27
41	2,038	1	13 00	40	27,309 20
42	1,610	½	6 50	10	10,626 00
	12,360				\$466,166 02
43	1,396				13,742 25
Total,	12,756				\$479,908 27

Memo.
Shares since organization..... 34,455
Shares March 1, 1903..... 10,414
Shares sold during the year ending March 1, 1904..... 4,052
Shares withdrawn during the year..... 645
Shares in force March 1, 1904..... 12,963
Shares sold since March 1, 1904..... 1,396
Loans made to March 1, 1903..... 1,841
Loans made during the year ending March 1, 1904..... 236

We, the undersigned committee appointed by the Mechanics' Perpetual Building and Loan Association, hereby certify that we have examined the books and records of said association and found them correct and in good shape. We find that the association holds 606 deeds of trust, amounting to \$498,310.

A. T. SUMMERY,
F. J. HAYWOOD, JR.,
A. M. McDONALD.



\$600 COTTAGE; PAID FOR IN 6½ YEARS. DUES PER MONTH \$6; INTEREST \$3;
TOTAL \$9. LOT NOT INCLUDED.

End of 23d Year.

SEMIANNUAL REPORT OF THE MUTUAL BUILDING AND LOAN ASSOCIATION OF CHARLOTTE, N. C., MARCH 31, 1904.

Officers: P. M. Brown, President; F. W. Ahrens, Vice-President; A. G. Brenizer, Secretary and Treasurer.
Directors: P. M. Brown, Dr. D. O'Donoghue, J. G. Shannonhouse, R. L. Gray, John R. Pharr, W. F. Dowd, John B. McLaughlin, Jr., George B. Hanna, A. G. Brenizer, F. D. Lethco, F. W. Ahrens, H. A. Kueppelberg.

FACE OF LEDGER.
Loans on mortgages..... \$214,175 00
Office furniture..... 261 47
Due by members..... 4,217 77
Expenses..... 647 50
Prepaid stock..... 1,469 94
Profit and loss..... 992 00
Cash on hand..... 5,321 94

Interest.
Instalments..... 33,313 25
Dues paid in advance..... 14,324 55
Bills payable..... 1,032 00
Entrance fees..... 180 80
Fines..... 251 97
Interest..... 6,568 85

\$227,085 62

GAINS AND LOSSES.
Entrance Fees..... \$180 80
Fines..... 251 97
Interest..... 6,568 85
Less:
Expenses..... 8647 50
Profit and loss..... 992 00

\$7,001 62

Net profits during the past six months..... \$5,362 12

ASSETS AND LIABILITIES.
Assets:
Loans on mortgages..... \$214,175 00
Cash on hand..... 5,321 94
Due by members..... 4,217 77
Office furniture..... 261 47
Discount prepaid stock..... 1,469 94

Liabilities:
Bills payable..... \$2,900 00
Dues paid in advance..... 15,356 55
Interest..... 18,256 55
Net capital stock at present date..... \$207,189 57

Composed as follows:
218 shares twenty-seventh class, value per share..... \$78 25
257 shares twenty-eighth class, value per share..... 71 75

250 shares twenty-ninth class, value per share..... 65 25
283 shares thirtieth class, value per share..... 58 75

708 shares thirty-first class, value per share..... 52 50
261 shares thirty-second class, value per share..... 45 75

333 shares thirty-third class, value per share..... 39 00
488 shares thirty-fourth class, value per share..... 32 50

490 shares thirty-fifth class, value per share..... 26 00
657 shares thirty-sixth class, value per share..... 19 50

563 shares thirty-seventh class, value per share..... 13 00
620 shares thirty-eighth class, value per share..... 8 50

Balance undivided..... 6 60
Net capital as above..... \$207,189 57

We, the undersigned committee appointed by the board of directors of the Mutual Building and Loan Association of Charlotte, N. C., to examine the books and assets of said association, report that we have done the same, and find the assets and liabilities correct according to the statement of the secretary and treasurer.

The Association holds:

18 mortgages twenty-seventh class..... \$9,400 00
12 mortgages twenty-eighth class..... 18,950 00
10 mortgages twenty-ninth class..... 11,425 00
16 mortgages thirtieth class..... 22,125 00
32 mortgages thirty-first class..... 20,350 00
16 mortgages thirty-second class..... 22,875 00
20 mortgages thirty-third class..... 23,250 00
19 mortgages thirty-fourth class..... 23,500 00
28 mortgages thirty-fifth class..... 24,100 00
14 mortgages thirty-sixth class..... 19,000 00
14 mortgages thirty-seventh class..... 7,100 00

8 mortgages thirty-eighth class..... \$214,175 00
207 mortgages, amounting to..... 4,217 77
Due by members as per statement..... 1,469 94
Prepaid stock..... 261 47
Office furniture..... 5,321 94

Gross assets as above..... \$225,446 12

We find that the income from the stock, after the association paying all taxes, is nearly 6.7 per cent. per annum.
Number of shares in the 12 series to April 1..... 5,178
Number of shares in the 39th, opened April 1..... 642

5,820

H. B. FOWLER,
T. S. FRANKLIN,
JOHN B. ALEXANDER

[FINIS.]

PIKE COUNTY COAL.

Development of the Great Kentucky Field at Hand.

[Special Cor. Manufacturers' Record.]

Pikeville, Ky., September 26.

With the initial arrangements for developing territory in the Marrowbone creek field, the beginning of the development of the great Pike county coking coal field is at hand. During the past few weeks the Big Sandy Company of Boston, one of the largest concerns in the Big Sandy region, has subleased several tracts on Marrowbone creek, and in a few weeks the extension of a branch line up the valley of the creek from the Chesapeake & Ohio road will be commenced. The operators who control territory in that region are preparing to install complete and up-to-date mining equipment, and mining will be by the latest and most improved methods. Considering the nature of the deposits of coal, it will be a matter of but a short time after the plants are installed for a good output of coal to be obtained.

The nearness of the completion of the Chesapeake & Ohio Company's 70-mile extension from Whitehouse up the valley of the Big Sandy to the Virginia line is greatly stimulating the operators interested in the development of the vast coal field embraced in the counties along the route of the line. Numerous short branches to extend up the narrow creek valleys are being projected, and when the line is ready for traffic, which will be late in the fall, many mines will be ready for operation. A great deal of territory has been under lease for 15 or 20 years by investors who realized the enhanced value each year gave to their holdings.

The entire area drained by the Big Sandy and its numerous tributaries is rich in deposits of coal, and with the exception of the more remote districts, has been fairly well tested during the past few years. For several years coal has been mined in the counties of Lawrence and Johnson, and has obtained a high rank in the Northern markets. But it is farther up the valley that nature seems to have deposited riches with a more lavish hand, and in this respect amply compensates for the remoteness of the field. It is in Pike county, the terminus of the C. & O. extension, and contiguous territory that the quality and quantity of the deposits excel, and it is here that a vast coal field, second to none in the country, will be developed during the next few years. In the near future thousands of tons of high-grade coking and steam coal will be shipped out of this territory to the markets in the North and the central West, and a line to connect with the seaboard on the east is a possibility of the not very remote future.

Pike county, the terminus of the line, now attracting the greatest attention on account of the excellent quality of coal suitable for coking purposes, is the most eastern county, as well as the largest, in Kentucky, and borders on both Virginia

and West Virginia. The county is drained by both branches of the Big Sandy, the Tug fork forming the boundary between Kentucky and West Virginia and the Levisa fork proceeding through the southern part of the county. Several years ago Eastern investors expended several millions of dollars altogether in acquiring territory in the region drained by these two streams, and deposits of coal of good thickness extend over the entire area. The population of Pike county is about 22,000, and, as one operator expressed it in an interview with the Manufacturers' Record correspondent, "when the mines are opened up a great number of the present population will work readily in the mines and will make first-rate miners."

It is along the Levisa fork that the present operations are about to take place, and initial work will be commenced along Elkhorn and Marrowbone creeks, two small streams flowing into Russell fork of the Levisa from the left.

Elkhorn creek is 20 miles in extent, and the drainage, with the exception of a few miles in Letcher, is all in Pike county. The creek runs parallel with the Kentucky and Virginia line, being distant about two miles. The C. & O. extension has been completed up to the mouth of Elkhorn creek.

The coal of the Elkhorn creek valley has received thorough tests recently, and has attracted more attention than any other coal in the Big Sandy valley. The high percentage of fixed carbon with a low percentage of ash and sulphur makes this coal admirably adapted to coking purposes, and it is on its value as a coking coal that its reputation is based. The deposits of coal, numbering eight, range in thickness from 36 inches as high as 11 and 12 feet, and, being above drainage, are easily worked. The Big Sandy Company, a Boston concern, is taking first steps toward developing this territory, and during the past year has opened up several of the seams. This company owns 130,000 acres of coal lands in the Elkhorn region, and has blocked this immense tract into leases, which are being subleased to individuals and companies.

The two principal seams and the ones that will be operated first are the upper and lower Elkhorn veins, averaging over five feet in thickness. These veins extend over the entire county, in some sections reaching a thickness of seven and eight feet. This coal has been the subject of much testing, and has been pronounced the equal of any coking coal on the market. The seams differ very little in analysis.

A number of other large companies own territory in the Elkhorn region, and during 1905 numerous mines will be opened up. Coke ovens will also be built by some of these concerns.

The Big Sandy Company has made several leases on Marrowbone creek, and has room for 25 good-sized operations on its property in that district. Marrowbone creek is a smaller stream than Elkhorn,

and empties into the Russell fork several miles above the mouth of Elkhorn. Four seams of coal have been opened up in the Marrowbone creek valley, all of good workable thickness. The coal differs to some extent from that in the Elkhorn valley.

The veins on Marrowbone range in thickness from four feet to six feet, and all are easily gotten at. The branch line to be constructed up the valley will be eight miles in extent, and the coal of that region will probably be the first on the market.

Developments in the Pike county fields will be followed by the opening up of mines in all the fields along the C. & O. extension, and in the counties of Floyd, Knott, Letcher and Johnson branch extensions will gradually reach the more remote fields. With the good facilities for marketing the coal the Levisa valley will in the course of a few years reach a state of development second to none.

W. S. HUDSON.

Alabama Coal-Miners' Strike.

[Special Cor. Manufacturers' Record.]
Birmingham, Ala., September 26.

The strike is still the center of interest in mining circles. Each side is active in advancing its interests and is indefatigable in pushing any advantage obtained. Each side reports that its condition is improving, and that it is gaining ground daily.

Coke ovens have been started up all over the district, and this is a good evidence that conditions from the operatives' point of view are improving.

So far as iron is concerned, there is little or no change in conditions as reported last week. The business concluded was insignificant and the prices obtained were about the same as last week, and on the basis of \$9.50 for No. 2 foundry. There were some few sales of basic iron at \$9.50, and some No. 3 foundry sold at \$9.25. Some No. 4 foundry sold at \$9, and gray forge was quoted at \$8.75 up to \$9. Some business was offered on the basis of \$9.50 for No. 2 foundry, delivery during the first quarter of next year, but no sales were reported. The aggregate of all the sales reported was very moderate. Some interests report an increased inquiry, while others report a very quiet time. The larger interests are interested now in delivering sales previously made, and they are in poor condition to take on new business of moment. They all believe in materially better prices after the turn of the year, and are not willing, under present conditions, to add to the line they have already sold. The condition of the strike adds to the uncertainties of the situation, which is a waiting one. The labor that is coming in will probably remain, as the funds for returning them to points from which they came are reported to be practically exhausted.

The strike has now been on for three months, and the miners declare its continuance will last as long as they have funds to keep it alive. Business has been seriously crippled by it, and the contending factions have suffered greatly from a financial point of view. Everybody is getting tired of it, but there is as yet no relief in sight. It is getting more and more every day to be a question of the longest purse.

J. M. K.

The Pig-Iron Market.

In their weekly report Matthew Addy & Co. of Cincinnati say:

"There is nothing phenomenal or sensational about the pig-iron market these days, but none the less trade is better than it has been, and there is a steady improvement that promises well. Week by week there has been increasing activity, until now we are getting into fairly normal lines."

"The most significant sign of the times

to our thinking is the effort on the part of many large consumers to purchase for delivery as long into next year as the furnaces are willing to go. Most producers are limiting deliveries strictly to 1904. They do not see the wisdom of selling at today's prices into 1905. For a long time earlier in the year the tendency of prices was downward. That tendency has been checked, and it is now, if anything, in the other direction. The market, after sliding down a long hill, has reached a level place at the bottom, and the next change will be uphill again. Furnace stocks are decreasing, the statistics all make for a strong market, the protracted strike of the Alabama coal miners is beginning to make a decided scarcity of Southern iron, particularly in the better grades—then why, the furnace men ask, should they sell now for forward shipment at the low prices still prevailing, when better prices are just ahead? This is the way many of the iron-masters are looking at the situation, and, viewed from this standpoint, it would be folly to load up order-books at present. It would, however, be good business for the consumer to buy for as extended shipment as can be secured, and many of them are evidently reasoning in this way.

"A good deal of tonnage, particularly in Northern irons, has been booked this week. There have been a few 1000-ton orders, and a goodly number of 500-ton lots. The Northern furnaces are a bit worried over the tendency of coke prices to advance.

"In the South the strike is still on in full force, though the operators are getting more and more outside help, and more coal is gradually being mined."

Kentucky Oil Advances.

[Special Cor. Manufacturers' Record.]
Barbourville, Ky., September 27.

The Standard Oil Co. has just given the price of Kentucky-Tennessee oil another boost, the lighter grade receiving an advance of three cents, bringing it up to \$1.01 per barrel, and the heavy grade being raised to 60 cents per barrel by a two-cent advance. From now on better prices are anticipated, as the dull winter season will soon begin, and with a declining market there would be less drilling.

Following its pipe-line extensions into the Cumberland and Wolfe county fields, the Standard is developing its immense acreage in those developments, and has a large number of rigs at work. The Standard and the smaller concerns are working in full accord.

During the past week some excellent producers have turned up in the lower fields, the Wayne county developments showing eight completions, one of which does 100 barrels. Several strikes do 50 barrels daily.

There are now about 50 concerns engaged in drilling Wayne county leases, and the scope of activity is being extended beyond the regular developments. The completions so far this month number 22, a falling off from the figures of the preceding month.

Cumberland county is receiving a great deal of attention, and has turned out some good strikes lately. This month the Standard landed a 150-barrel producer in the Salt Lick Bend. That field is now producing on an average 3000 barrels weekly, and shows an increasing output.

The September record of completions will hardly come up to the August record, as many wells have been tied up with fishing jobs, scarcity of water and other retarding features unavoidable in any oil field. Few strikes have been made in the upper developments during the month, although a large amount of wildcat drilling is under way. The number of rigs in the upper and lower fields is placed at 150.

In Southwestern Oil Fields.

[Special Cor. Manufacturers' Record.]
Beaumont, Texas, September 25.

The flowing wells at Jennings continue to make that field the most productive in the Texas-Louisiana oil belt. One new well has been brought in at Jennings—the Wilkins Company's No. 1. It is not in the gusher territory, and will be equipped for pumping. The production of the field runs above 25,000 barrels a day, the greater part of which is going into earthen storage. Bass & Benckenstein, owners of the big gusher which came in on September 8, hold the record for quick work in the construction of earthen reservoirs. They started the teams on a 50,000-barrel ground tank one evening and had it ready to receive oil the next night.

Batson has furnished the best of the new wells in the Texas fields. The J. M. Guffey Petroleum Co. brought in a gusher on the Wing farm at Batson last week which started off at 6000 barrels a day. At last accounts the sand had cut out the strainer and the well had choked up.

Saratoga will be heard from before a great while. One of the Guffey wells on the Harrington farm was deepened recently, and came in good for 800 barrels a day. This has attracted attention to the Saratoga district, and will doubtless result in much activity there. The Guffey Company, the Santa Fe and the Southern Pacific are the largest holders of land in the district. Some large wells are expected from a deeper sand than has yet been developed. The new Guffey well is producing from a sand heretofore undeveloped. It is said to be between 800 and 900 feet deep.

HOLLAND S. REAVIS.

IN THE MANATEE COUNTRY.

DRAINAGE WORK ON THE WEST COAST OF FLORIDA.

[Special Cor. Manufacturers' Record.]
Sarasota, Fla., September 24.

In addition to the drainage schemes mentioned recently in the Manufacturers' Record, the Venice Company of Sarasota, Fla., is developing this season 100 acres of as fine orange, lemon and lime land as there is to be found in the State, planting the most improved citrus stock. The Parrish & Sims Company, consisting of John Parrish and C. J. Sims, Robert Youngblood, manager, Parrish, Fla., has begun the draining of a tract, something over 500 acres of "saw grass," near Parrish. These people have ample capital to carry out the work of developing successfully, and this work, with other drainage schemes mentioned in the Manufacturers' Record, is only the beginning of gigantic drainage operations on the west coast of Florida, which will convert lands heretofore considered worthless into the richest and most valuable sugar-cane, rice and trucking section on earth. The contract for digging the cedar hammock ditch was let to Mr. L. B. Belk of Bradenton; contract price as follows: Sand, 9 cents per yard; rock, 48 cents per yard, marl, 17 cents.

The Southern Investment Co., Savannah, Ga., begins at once the construction of two spurs of the Florida West Shore Railway, to extend to Ellenton and Fruitville, respectively. These spurs are built to move the enormous fruit and vegetable crops and fuller's earth, which heretofore were conveyed to the river and coast and hauled by wagon and boats. Both spurs will be something over four miles in length. The completion of this line will mark a new era for the northeastern section of the county, as it means better transportation facilities for the miners of fuller's earth, and the Atlantic Refining Co.'s large plant will be enlarged this fall, enabling the works to fill their orders promptly. Heretofore all their shipments were made via independent line steamers,

never more than 125 tons being carried out at one time. It will also mean the opening of the contemplated plant at Rocky Bluff, the syndicate purchasing the mines having decided to begin immediately the construction of works and open additional mines. The Atlantic Refining Co. (Standard Oil Co.), it is reported on good authority, will erect additional works at a cost of over \$500,000. Your correspondent was informed by a railroad agent that the company had received orders from Germany alone that would keep the plant hustling day and night for the next six months.

Messrs. B. H. Yeomans, I. T. Shumart, K. D. Cowart and Frank Gupill are developing immense oyster beds on Sarasota bay, having just received notice that their applications had been granted by board of county commissioners. Dr. Whittaker of Bradenton is also interested.

Judge Chapline has begun the erection of a large three-story building to be used as a bank, offices and lodge building.

Prof. Vincenzo Laraia, an educated and polished Italian gentleman, is here looking the field over with a view to settling a colony of his countrymen, and from a personal interview with the Professor your correspondent gained enough of information that leads me to believe that a year hence will see many Italian families settled here.

The enterprising citizens are also after Uncle Sam for a small slice of that river and harbor appropriation, memorial to Congress being in circulation and being signed extensively for the deepening of Big Sarasota Pass, enabling larger vessels to come to the city. This has been quite a drawback to the Mobile-New Orleans boats.

WILLIAM HANSON.

RURAL SECURITY AND THE COTTON PROBLEM.

Editor Manufacturers' Record:

The manufacturers' associations, through their speakers, seem somewhat uneasy about the production of cotton sufficiently to supply the demands of the future. The South can produce abundant supply for the world and maintain her monopoly without importation of foreign labor, provided a remedy can be found to insure the safety of farmers' families on the farm. Thousands and thousands of men would remove back to their farms if their wives and daughters were safe. They moved to town not from choice. Back on the farm, directing and controlling in person, the production of cotton would immensely increase. The price of cotton is now remunerative, and thousands would go back to the farm but for the conditions that exist.

The farmer's wife in the negro belt is largely a prisoner at home. She is denied the freedom of the highways, and unsafe now when her husband is absent from home. This is a condition, not a theory, and if a remedy can be found and our women be secure, as in the North, then agricultural activity will take on new life and we can produce all the cotton needed.

This is the problem. Solve it, and no need to go to Europe or Asia or China for labor. The landlord back on the farm is all that is needed. He will return gladly if his family be safe and secure.

JAMES CALLAWAY.

Macon, Ga.

The Bank of Palmetto has been chartered at Palmetto, Ga., with \$25,000 capital. The incorporators are H. T. Daniel, F. W. Hudson, W. S. Zellers and F. H. Steed.

H. Waragai, representing a large firm of Tokio, Japan, will establish agencies in different parts of the South for the purchase of cotton.

INDIVIDUAL EXHIBITS AT ST. LOUIS.

[Special Correspondence Manufacturers' Record.]

St. Louis, Mo., September 27.

In the locomotive section of the Transportation Building, World's Fair, the Lima Locomotive & Machine Co. of Lima, Ohio, has on exhibition a 65-ton Shay locomotive, an illustration of which appears herewith. Constructed in April of this year, this engine is new from the shop and combines every feature of the Shay type which forms so distinctive a part of the construction work done by the Lima plant. The Shay locomotive was designed to haul heavy loads on grades and around curves, and for equal weight is conceded to be the most powerful locomotive in the market. It is in very common use on logging and mining railroads in this country and elsewhere, and has also been adopted by some of the trunk line railroads for use on branches and portions of the road where particularly heavy-grade duty was required. The Shay locomotive is built for standard or narrow gauge and from 10 to 110 tons in weight. A distinctive characteristic of the Shay locomotive is that all the wheels are drivers. The one on exhibition at the fair has 12 drive-wheels three feet in diameter each.

The Shay locomotive is built on center-bearing swiveled trucks; the locomotive

the strap securely fastened with turned steel bolts, making a strong and substantial connecting rod. The boxes are of the best composition metal and well fitted. The crankshaft is of forged steel, and having three pins set at 120 degrees each, insures a regular and steady motion while running, and renders it impossible to get more than one pin on the center, which is a great advantage in a locomotive. The slides are bolted to the engine frame and bored out to receive the crosshead, and are adjustable. The engines are self-contained and cast in one piece, which insures the crosshead and cylinder being in line. The crossheads are made of steel castings with bronze gibbs. The trucks are all built of iron, and are strong and substantial. The truck beams are built of steel channels strongly bolted together. Heavy I-beams are used in the engine frame.

The engines, boiler, tank and cab are all securely attached to frame.

The cab is of neat design, and all material and workmanship are the best obtainable.

The engines and machinery all being on the right side of the boiler and mostly in front of the cab, are at all times under the eye of the engineer.

Building made by the American Locomotive Co. of New York. As is known to railroad men, this company includes nine of the important locomotive builders in this country and Canada, namely, the Schenectady Works, Schenectady, N. Y.; Pittsburg Works, Allegheny, Pa.; Cooke Works, Paterson, N. J.; Dickson Works, Scranton, Pa.; Brooks Works, Dunkirk, N. Y.; Richmond Works, Richmond, Va.; Rhode Island Works, Providence, R. I.; Manchester Works, Manchester, N. H., and the Montreal Works, Montreal, Canada.

While the "spirit of the twentieth century" is the central feature of the exhibit, as great, if not greater interest, is likely to be taken in the other engines of the exhibit, especially by engineers and railroad men. For instance, among the 13 engines which comprise the American Locomotive Co.'s exhibit is a four-cylinder articulated compound freight locomotive, which is the heaviest and most powerful locomotive ever built. It is of the Mallet articulated type, and was designed for mountain service on the Baltimore & Ohio Railroad.

It is of a type perfected by Mallet, the French locomotive designer, and has largely been put in use on European roads having heavy grades and sharp curves. This type of engine permits compounding under the most advantageous conditions, as the high-pressure cylinders can be applied to

Another very interesting feature of the exhibit is the four-cylinder balanced compound locomotive which was built for the New York Central & Hudson River Railroad. In the design of this engine a great achievement has been made in the elimination of counter-balance weights from the driving wheels, while at the same time not departing in any way from the best previous accepted practice of locomotive construction. In this engine the four cylinders are in a group in the usual place, and are so related that it has not been necessary to duplicate the valve motion.

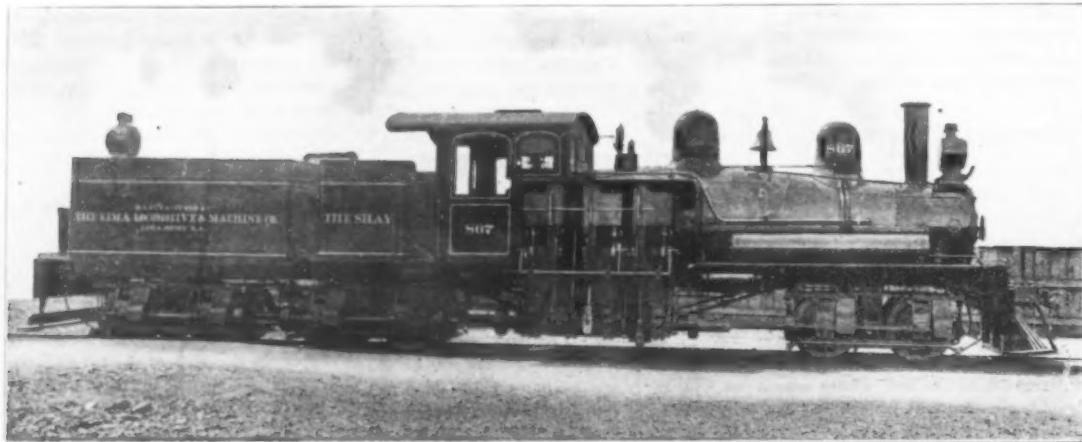
The use of four cylinders, two high pressure and two low pressure, gives an opportunity for compounding under the most favorable conditions, and with each high-pressure piston working 180 degrees from its low-pressure piston, and the other pair working 90 degrees from the first pair, the successive impulses from the four cylinders produce a remarkably uniform turning moment. This results in a much more rapid rate of acceleration when starting up than has been possible with two-cylinder engines or with many previous types of four-cylinder engines.

In order to avoid the concentration of work on a single driving axle, it has been considered best to connect one pair of cylinders to the forward axle and the other to the rear axle. This is accomplished by placing the high-pressure cylinders between the frames and locating them slightly in advance of the usual position, so as to secure the necessary length of space for the connections, crossheads, guides, connecting rods, etc. The forward axle is necessarily a crank axle. The low-pressure cylinders are placed outside and connected in the usual way to crankpins on the rear drivers. With this relative arrangement of each pair of one high-pressure and one low-pressure cylinders it has been possible to apply both a high-pressure and a low-pressure piston valve to the same valve stem, and to utilize the intermediate portion of the valve chamber as a receiver between the two cylinders.

In the way of advantages inherent in this type of engine, it is claimed of first importance the elimination of counter-balance weights from the driving wheels, the engine nevertheless being in perfect balance both horizontally and vertically. This results in the complete absence of slip at high speed.

Further advantages are the more perfect compounding which results from this arrangement of cylinders, whereby it becomes possible to secure more favorable cylinder volume ratios than with the two-cylinder compound, and thus the consequent approximately uniform turning moment throughout each revolution; the power of quick acceleration, resulting partly from the uniform turning moment and partly from admitting to the low-pressure cylinders, at the time of starting and through a special starting valve, live steam at reduced pressure; the reduction of stresses in the driving axles, crankpins and other parts of machinery due to the system of distributing power from the cylinders, approximately one-half being transmitted to the forward driving axle and one-half to the rear axle; increased hauling capacity and endurance at high speed, due principally to the perfection of the compounding and the consequent economical use of steam, but partly also on account of the perfect balance of the reciprocating and revolving parts.

The 10 other locomotives in the exhibit include various types of passenger and freight, representing the best modern construction in their lines. Among them is the very ornate switching locomotive named "Adolphus," and built for moving a freight train from the Anheuser-Busch Brewery of St. Louis over the Manufacturers' Railway. There is also an engine



65-TON SHAY LOCOMOTIVE.

frame, with water and fuel, rests on the trucks, which are under each end. The entire weight is useful for adhesion, and is distributed on 8, 12 or 16 drivers, which admits of using lighter rail. The trucks with drive-wheels are free to swivel, and vibrate independently of the locomotive frame, and thereby adjust themselves to curves and irregularities of the track with the least possible friction. The power is conveyed from the engines to the drive-wheels by means of a horizontal shaft in sections, each section provided with a universal joint and expansion couplings, forming a flexible shaft which is rigid in rotation, but flexible in all other directions. On this flexible shaft are steel pinions, pressed and keyed, on which engage the steel gear-rims, which are bolted to the right-hand drive-wheels of each truck. The horizontal and crank shafts are connected by means of the universal couplings, which have proven reliable and efficient. The engines all being on the right side, are firmly fastened to the boiler in an upright position, which secures to the cylinders the least possible wear. The piston heads are solid and have rings sprung in, which correspond to the best practice of locomotive construction. The piston rods are of steel. The links and parts connected thereto are of forged steel or Norway iron, case-hardened. The connecting rods are of forged iron. The ends at the crossheads are forged solid and cut out to receive the brasses, while the crank end has

The equilibrium is gained by setting the boiler to the left of the center of the frame, and the cylinders and most of the machinery being on the right side, makes the locomotive in perfect balance.

The valves and link motion are of the most improved kind and design. The fittings and trimmings are of the same kind, and what are used on all first-class locomotives.

The boiler is covered either with magnesium block or asbestos millboard underneath, and wood lagging on outside, and cased with planished iron.

AN IMMENSE LOCOMOTIVE.

The most conspicuous figure in the Transportation Building is the immense passenger locomotive, high above the floor on a revolving turntable, the drive wheels of the engine themselves also being ceaselessly revolved during the hours when the building is open. While no steam is up, the wheels being turned by a mechanical device underneath the engine, the resemblance to a moving locomotive is complete, and the exhibit never fails to attract an interested throng. This engine, embodying, as it does, the most modern construction in passenger locomotives of the present date, and in its looks and movements typifying enormous power, is denominated "the spirit of the twentieth century."

This locomotive, built for regular passenger service on the Big Four Railroad, is only one of the engines comprising the notable exhibit in the Transportation

one truck and the low-pressure cylinders to the other, and any desired cylinder ratios can be adopted. This divides the work equally between the two sides of the engine, and the retardation of cut-off peculiar to the compound system gives a more nearly uniform turning moment.

In the engine of this type each pair of cylinders is connected with three pairs of driving wheels, the rear high-pressure group being rigidly attached to the boiler, while the forward or low-pressure group is on a swiveling frame, the motion of which about its center is duly restrained by springs, which also tend to bring the forward group of wheels into proper alignment when the engine enters a tangent. The wheel base of each group of three pairs of driving wheels is 10 feet, and total wheel base of the engine is 30 feet 8 inches. The total weight of the engine in working order is 234,500 pounds, or slightly over 10,900 pounds per running foot of wheel base. The normal tractive power when running compound is about 70,000 pounds, but this can be increased (by working the engine simple) to 85,000 pounds.

This engine can be operated on curves of 20 degrees and upwards with great ease and with less frictional resistance than an ordinary consolidation engine of half its capacity. It is undoubtedly the largest and most powerful locomotive in the world at the present time, while many of its parts are lighter than in many ordinary heavy engines.

which was built by the American Locomotive Co. for the Kiushiu Railway of Japan, and there is a four-wheel saddle-tank locomotive built by the American Locomotive Co. and exhibited to indicate the wide variety of types of locomotives which this great company constructs.

W. B. Smith Whaley.

In the midst of his financial difficulties, of which misleading reports were published last week, Mr. W. B. Smith Whaley must find deep satisfaction in the attitude toward him of those persons among whom he has wrought during the past 10 years. Sympathy for him at Columbia, S. C., is well epitomized in the daily press of that city. The Columbia State says that but a fraction of the amount named in the voluntary petition of Mr. Whaley is unsecured; that his financial embarrassment had been long known and discounted in business circles thereabout, and that no Columbia institution with which he was formerly connected or had dealings is in the slightest degree affected by his failure. It adds:

"For a brief period Smith Whaley may be financially embarrassed, but it is not ordained that one of such constructive powers, the very impersonation of the spirit of progress, having boundless zeal and inextinguishable enthusiasm, should long remain unelevated. His fort lies, not in the management of details or in the intricacies of financing, but in the conception and execution of industrial development on grand scales."

The Columbia Record, commenting upon the spur given to Columbia by the advent of the energy and enthusiasm of Mr. Whaley, says:

"Many another financier has met the same fate that has befallen Mr. Whaley, but whatever the cause of his troubles, which naturally will affect others, Columbia cannot forget what she owes to him in accomplished results which have done much to arouse a spirit of progress and confidence in the future of the city, insuring still greater growth in population and commercial development. It is confidence that counts, and in our view of it Mr. Whaley was largely responsible for instilling it in the minds of the business men of Columbia, and for that he deserves the good-will of the people of the city as a whole. As to his financial operations we, of course, know nothing, but presume that, like many other men, he aimed high and missed. It was to his public-spiritedness and progressiveness that Columbia is largely indebted, and it is this feature of his business career that will be remembered and which in his financial troubles will bring forth a sympathetic sentiment among citizens."

Mr. F. L. Norton, counsel for Mr. Whaley, has been quoted at Boston as stating that he is convinced that those Southern cotton mills in which Mr. Whaley was heavily interested will not be affected by his assignment.

New Cotton Warehouse.

An announcement is made that the Baltimore Fidelity Warehouse Co., Albert G. Ober, president, has begun the erection of a cotton warehouse on the east bank of the Patapsco river at the entrance to the harbor of Baltimore. The warehouse will be 500 feet long and 100 feet wide. Half of it will be two stories and the remainder one story high. It will accommodate from 30,000 to 40,000 bales of cotton. The property fronts on the water for a distance of 1100 feet, and there is 30 feet of water at the wharf. It also has railroad connections. The company proposes to establish a warehouse system throughout the South and to issue guaranteed warehouse receipts against cotton stored with it.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

A \$200,000 Increase.

The Woodside Cotton Mills of Greenville, S. C., has amended its charter, increasing capital stock from \$200,000 to \$400,000, in accordance with the decision announced last May in the Manufacturers' Record. This increase is for the purpose, as previously stated, of building an addition to hold 30,720 spindles and looms to match (about 900), and arrangements for an early completion of the improvements are now being made. The company found the betterments demanded because of the increase in its sales of light-weight fancy cotton goods. Present equipment is 11,280 spindles and 300 looms.

Adding 6048 Spindles, etc.

Having determined to enlarge its plant, the Springstein Mills of Chester, S. C., has begun the erection of an additional building to be two stories high, 50x116 feet, in which will be placed 6048 spindles and the necessary complement of opening and preparing machinery. These betterments indicate an expenditure of about \$100,000. The company has also installed three 150-horse-power boilers and renewed its engine cylinders, and will add some dyeing apparatus. Its present equipment is 8964 spindles and 902 looms, the production being ginghams.

The Cotton Movement.

In his report for September 23 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 23 days of the present season was \$10,811 bales, an increase over the same period last year of 415,427; exports were 355,570 bales, an increase of 241,443 bales; takings by Northern spinners 88,630 bales, an increase of 7726 bales; by Southern spinners 107,240 bales, an increase of 33,670 bales.

Floyd Cotton Mills Resume.

The Floyd Cotton Mills of Rome, Ga., has resumed operations for the season, its equipment being 5136 ring spindles and 110 looms, and cotton duck being the product. About \$75,000 has been expended for new machinery and improvements during the summer. (Last January it was announced that Lipscomb & Willingham of Rome had purchased the controlling interest of Hugh T. Inman of Atlanta in this property.)

A \$100,000 Hosiery Company.

A company capitalized at \$100,000 has been incorporated at Rocky Mount, N. C., for the purpose of establishing a mill for the production of knit hosiery, etc. It is known as the Rocky Mount Hosiery Co., but details as to the plant have not been announced as yet. The incorporators are Messrs. R. Braswell, J. C. Branch and George S. Edwards of Rocky Mount, and T. P. Braswell of Baltimore, Md.

A \$30,000 Woolen Mill.

The Englehart Woolen Mill Co. of Guseman, W. Va., has been incorporated, with a capital stock of \$30,000, for the purpose of manufacturing all kinds of woolen goods. No details regarding the plant have been announced. The incorporators of

the company are Messrs. John Englehart, Jess M. Englehart and Sanford H. Hartman of Guseman, James B. Kelley and Bruce A. Ringer of Lenox, W. Va.

A \$10,000 Knitting Mill.

Arrangements have been completed at Gadsden, Ala., for the erection of a knitting mill to cost \$10,000, and R. L. Adams is organizing a company to own and operate the plant. A suitable building has been secured, and is now being improved to receive the knitting machinery. The mill will produce shirts, the daily output to be 200 dozen.

Textile Notes.

The Lippard Yarn Mill at Concord, N. C., has been sold to Dr. W. H. Lilly for \$25,000. It has an equipment of 1920 ring spindles.

The Commercial Club of Rock Hill, S. C., is in correspondence with a glove manufacturer of Gloversville, N. Y., relative to locating a branch factory in Rock Hill.

St. Louis (Mo.) capitalists have been investigating the Denison Cotton Mills at Denison, Texas, with a view to purchasing and operating same. The plant is an idle one of about 15,500 spindles.

New York manufacturers of knit goods are investigating at Weldon, N. C., with a view to establishing a mill for the manufacture of gloves, mittens and similar knit goods, 200 operatives to be employed.

The Glenwood Cotton Mills of Easley, S. C., has completed the installation of 2000 spindles and 36 looms, thus filling vacant space in its plant. The company had been operating 16,800 spindles and 416 looms.

T. R. Trainer of Chester, Pa., is in Birmingham, Ala., investigating the advantages of that city's territory as a location for cotton mills. He contemplates building a plant to have an equipment of 10,000 spindles.

It is reported that the Rushton Cotton Mills of Griffin, Ga., will expend \$25,000 for new machinery. The company held its semiannual meeting last week and re-elected the management with B. B. Brown, president, to succeed J. S. Boynton, deceased.

Victor M. Montgomery, president of the Pacolet Manufacturing Co. of Pacolet, S. C., has stated that there has been nothing decided as to the re-erection of the company's Nos. 1 and 2 mills at Pacolet. In another month the directors of the company will meet, and may then take some action in this direction.

J. H. Mills and associates of High Point, N. C., have completed arrangements for establishing a knitting mill. They have purchased a suitable site and will erect a modern mill structure two stories high, 60x100 and 30x40 feet, to accommodate the equipment of machinery. A stock company will be organized.

The Scotland Neck (N. C.) Cotton Mills has begun the erection of an additional building, to be two stories high, 40x130 feet, to be used for offices, cloakroom and other purposes, and some new machinery will probably be installed. This company operates a knitting mill. All contracts for additional equipment have been placed.

It is reported, but not authoritatively, that the Merrimack Manufacturing Co. of Huntsville, Ala., is preparing to begin the erection of its third mill. The company's present two mills each have an equipment of about 25,000 spindles and 850 looms, and the third mill (when built) is to have the same equipment, costing about \$500,000. The company informs the Manufacturers' Record that no consideration is being given the third mill at this time.

FOREIGN TRADE

Pig-Iron Trade With Germany.

Ad. Hamm & Co. of Hamburg, Germany, write to the Manufacturers' Record regarding the pig-iron trade with Germany as follows:

"Before the recent combinations, that is, in 1898 and 1899, we were engaged in active business with your country, and have imported considerable quantities of American pig-iron. Since the great combine trade with America in pig-iron has been at a perfect standstill, as is well known. Still we are of the opinion that this condition of affairs will change within a short time. Since then some new furnaces have sprung up in your country, and if these—we are well acquainted with the old ones, for we had plenty of trade with them—are in a position to compete with English and German iron, then we would be under many obligations if you would invite them to correspond with us. We are further convinced that a great business and important commercial relations satisfactory to both parties can be again established, provided the furnaces referred to are able to compete."

Wants Peanuts.

Mr. William A. Haygood, P. O. Box 143 O, Cape Town, South Africa, writes to the Manufacturers' Record that he desires to make connection with the grower or large shipper of really first-class peanuts, who will give him the lowest export prices f. o. b. New York on lots of 50 or more bags. He suggests that if samples of peanuts, so done up as to be open for inspection, and marked samples, which will cost eight cents a pound, be sent him, they will greatly help him in soliciting orders.

Nicaragua's Trade Field.

Isidro de J. Olivares of Managua, Nicaragua, writes to the Manufacturers' Record that he is interested in introducing into Nicaragua American bicycles, rubber hose, iron tubing, cane mills and safe-deposit boxes. He adds that Nicaragua is a good field for machinery, agricultural implements, barbed wire, kerosene, flour, cotton goods, vehicles and kitchen utensils.

Notes.

Jesus T. Contreras of Amatlan, Guatamala, writes to the Manufacturers' Record that he desires to represent American manufacturers in that republic.

C. Preumayr & Co., No. 1360 Tucuman avenue, Rosario, Mexico, write to the Manufacturers' Record that they are interested in the introduction of American carriages, sulky and seeders.

H. J. Woodhouse & Co., No. 16 A Apsley Bldg., Old Hall street, Liverpool, England, informs the Manufacturers' Record that they have established an agency for sugar and glucose and for bags and twine.

Ludwig Moll of Dusseldorf writes to the Manufacturers' Record that he would like to get in touch with American manufacturers of swivel hooks, snaps, etc., in Japan and X C finish for saddlery and harness.

Van der Linde & Teves of Amsterdam, Holland, write to the Manufacturers' Record that as importers of machinery to Java they shall probably need machinery for cleaning and compressing cotton. They desire to know what are the best machines, the best compresses, the best kinds of bales, and the addresses of makers of the machinery.

Secretary George R. Brown of the Little Rock Board of Trade has received a number of inquiries regarding cement deposits in Arkansas. The product of the Arkansas mines has been used in construction at Little Rock.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

NORFOLK & WESTERN.

Much Construction Done During the Last Fiscal Year.

The annual report of the Norfolk & Western Railway, which, notwithstanding a heavy increase in operating expenses, shows a gratifying gain for the year ended June 30 last, also says that it is expected the new low-grade line between Naugatuck and Kenova, W. Va., about 60 miles, will have track laid over its entire length by the end of 1904. The company also proposes to build an extension of about 21 miles to the Iaeger & Southern Railway, which is now operated from Iaeger to Ritter, five miles. The extension is to be up the Dry fork of Tug river to the mouth of Jacob's fork, with a branch from there to reach coal lands that are to be developed by the Berwind-White Coal Mining Co. and the Farraday Coal & Coke Co. A connecting road will be built in the State of Virginia under the charter of the Pocahontas & Western Railroad Co., and this will altogether make about 57 miles of new line to be constructed.

The report also notes an extension of a little more than eight miles to the Tug Fork branch from point above Gary to the operations of the Page Coal & Coke Co. This makes the branch about 15 miles long from its junction at Welch with the main line. The Sand Lick spur from the Tug Fork branch has also been extended a mile and a-half, making its total length about three miles, reaching property owned by the United States Coal & Coke Co. The Chestnut Creek branch of the North Carolina extension has been extended 2.72 miles from Blair to Galax. The Widemouth branch has been extended nearly 13 miles to the east approach of Clark's Gap, with three spurs ranging from one and one-quarter to about five miles each, and making the total track of the branch a little more than 21 miles. The Radford branch is to be extended about three and one-half miles from its present terminus to a point near the junction of the Little and New rivers.

The financial side of the report shows gross earnings \$22,800,901, increase as compared with the next preceding year \$1,640,316; operating expenses \$14,213,730, increase \$1,516,300; net earnings \$8,587,261, increase \$124,016.

During the year the following new industries were established along the line: Thirty-three saw-mills, 12 canning factories, two furniture factories, 10 coal mines, two foundries and six ice factories. When the year closed 129 coal and coke companies were in operation along the road, 10,249 coke ovens were completed and 1517 were under construction, which includes 1028 finished and 1209 building for the United States Coal & Coke Co. There are also six mines in the Pocahontas field about ready for operations.

The company purchased the following equipment: Sixty-five locomotives, 200 gondola cars and 38 coke cars. On the main-line track 190 miles were relaid with 85-pound rails.

A recent dispatch from Huntington, W. Va., gives further information about the work on the line from Naugatuck to Kenova as follows: Grading is completed except on a few of the heavier cuts. Track is laid from Naugatuck north 14 miles to Jennie's creek, and as soon as the bridge now being built there is finished, will be continued. At the other end of the line about 20 miles of track is laid from Kenova to Fort Gay. It is expected that

the entire line may be ready for running trains by November 20.

It is said that this new line, the Big Sandy extension, will open some of the finest coal properties in the State. The dispatch says:

"From Naugatuck to Camp creek, a distance of 12 miles, both sides of Tug river are honeycombed with the finest coal in the world, and preparations are being made to open numerous and extensive mines as soon as transportation facilities can be had."

"The old Warfield mines, probably the first ever opened for commercial purposes in the State, from which the cities of the South got coal before the days of railroads, will be reopened at an early date, and a gentleman thoroughly familiar with the territory is authority for the statement that no fewer than 18 distinct operations have already been planned."

NEW LINES CHARTERED.

Several Companies Formed to Build Roads in the Southwest.

The Gulf, Texas & Northern Railroad Co. of Marshall, Texas, has filed its charter, capital \$500,000, and proposes to build a standard-gauge line from a point on the Gulf of Mexico near Sabine Pass, Texas, to Oklahoma City, O. T. The line in Texas will be about 250 miles long, and will run through the following counties: Jefferson, Orange, Hardin, Newton, Tyler, Jasper, Angelina, Sabine, San Augustine, Shelby, Panola, Harrison, Marion, Upshur, Camp, Morris, Franklin, Titus, Hopkins, Delta, Red River and Lamar. The incorporators are H. L. Hull of Fort Worth, Texas; M. Scully, W. L. Martin, Jacob Weisman, L. W. Lloyd, A. B. Blocker, W. C. Pierce, Jr., of Marshall, Texas; S. J. Smart, H. C. Robinson, R. W. Caraway, Logansport, La.

The Canadian Valley & Western Railway Co. of Norman, O. T., capital \$3,000,000, has been granted a charter in Oklahoma to build a line 130 miles long from a point near Washita Junction, in Washita county, southeast through Washita and Caddo counties, Oklahoma Territory, to Chickasha, I. T.; thence to the head of Walnut creek and along that stream and the South Canadian river to connect with the Muskogee Union Railway. The incorporators are T. C. Woods, W. G. Blanchard, T. F. Green, Dorset Carter, J. F. Sharp and D. R. Malone of Purcell, I. T.; W. H. Johnson, G. M. Roundtree and M. L. Brittain of Norman, O. T.

The Jefferson City, Jerico & Southwestern Railroad Co. has been chartered at Eldon, Mo., to build a line between that point in Miller county, Missouri, to Minden, in Barton county, about 125 miles. The road will reach the Missouri Pacific at each end, and would furnish a very direct line for that road from St. Louis to the Southwest. The incorporators are Julius R. Long of Little Rock and W. S. Allison of Eldorado Springs, Ark.; E. R. Chapell, John B. Meyers and Robert E. Collins of St. Louis.

Missouri, Kansas & Texas.

The annual report of the Missouri, Kansas & Texas Railway for the fiscal year ended June 30 last shows gross earnings \$17,766,595, increase \$558,402; operating expenses and taxes \$12,907,700, increase \$548,626; net earnings \$4,768,885, increase \$9775.

The report also says that 288 miles of track were ballasted during the year; that ballasting is being continued, and furthermore, that a comprehensive plan has been adopted to ballast the entire main line from St. Louis and Kansas City to San Antonio, Texas, during the present fiscal year, and also to complete the ballasting

of the entire main line of the system during the following year. This will practically complete the rebuilding of the railway.

The company has received during the year 59 locomotives, 963 box cars, 21 passenger coaches and about 50 miscellaneous cars. It will also have delivered to it by the end of October 27 locomotives, 1350 coal cars, 200 refrigerator cars, 200 furniture cars and 75 side-dump coal cars. At the close of the year the company had 420 locomotives and 14,300 cars.

New industries continue to be developed along the road, 116 plants having been established during the year. A large number of new coal mines have also been opened, the most important in the Wilburton field in the Indian Territory.

Jefferson to Athens.

Information has been received by the Manufacturers' Record concerning the proposed Jefferson & Athens Railroad Co., which is to build a line about 18 miles long from Jefferson to Athens, Ga. As soon as the charter is granted, which is expected within the usual time, 30 days, the promoters will solicit subscriptions and begin securing rights of way for the early construction of the line, which, it is said, can be built with little grading. Between Jefferson and Athens there are no watercourses, and as the land is almost level, construction will be comparatively easy. Connection will be made at Athens with the Southern Railway, the Central of Georgia, the Seaboard Air Line and the Louisville & Nashville, as represented by the Georgia Railroad. It is believed that the line will be a money-maker from the start. While the company is not yet organized, it appears probable that the officers will be as follows: R. L. J. Smith, president and general counsel; H. W. Bell, first vice-president and general manager; W. H. Smith, secretary and treasurer.

B. & O. Dining-Car Service.

The Baltimore & Ohio Railroad has made several important improvements in its dining-car service, wiping out a small yearly profit and creating a not too large deficit, in order to give a very much better service. The system has 25 dining cars in daily use, and seven of them have been built within the last two years, averaging in cost about \$20,000 each.

Within the past few months the wages of the stewards have been increased and a premium placed on good service and attention to patrons. A traveling chef has been employed, whose sole duty it is to inspect the kitchens and instruct the cooks in their work.

The new system has been effective for several months, with the result that the service is greatly improved and the receipts larger.

Oklahoma & Cherokee Central.

The Oklahoma & Cherokee Central Railroad Co. is reported to be surveying and to have laid out a preliminary line through Nowata, I. T., and east and west of that town to have selected a permanent route. It is further reported that grading machinery has been ordered, and as soon as it arrives actual construction will begin; in fact, it is said some of the machinery has been received at Chelsea, I. T.

The route proposed will be through Indian Territory and Oklahoma to Wichita, Kan., and it is also stated that an extension has been approved from Pryor Creek, I. T., to Fort Smith, Ark. Horace Adams is representing the company in securing rights of way near Chelsea.

May Build to Elkhorn.

Concerning the report that the Virginia & Kentucky Railway of Wise county, Vir-

ginia, would build an extension into the Elkhorn coal fields of Kentucky, Mr. D. R. Bishop, superintendent of the Wise Terminal Co., writes from Glamorgan, Va., to the Manufacturers' Record saying that the company has run a rough preliminary survey from Glamorgan through the Cumberland mountains to the Elkhorn drainage, but it is doubtful whether anything will be done this year.

Railroad Notes.

The Union Railway Co. of Memphis, Tenn., has, it is reported, completed its belt line around the city, and will soon have it ready for regular traffic.

The Denver, Enid & Gulf Railway is reported to have awarded the contract to the Oklahoma Construction Co. for building its projected extension from Enid northwest to Kiowa, Kan.

Mr. D. W. Spooner, chief engineer of the Arkansas, Missouri & Kansas Railroad Co., writes from Joplin, Mo., to the Manufacturers' Record that grading has been started on the line, but most of the work is being done under the supervision of the railroad company.

Mr. M. S. Gibson, manager of the Lookout Inn, Lookout Mountain, Tenn., writes the Manufacturers' Record that the electric railway projected there is intended to be built from St. Elmo to the top of Lookout mountain, but no definite action has yet been taken upon the proposition. The people interested are to hold a meeting on October 10 to consider it.

Mr. E. Watkins of Watkins & Thompson, attorneys-at-law, Chattanooga, Tenn., writes the Manufacturers' Record confirming the report that a charter was applied for by him and others for the Florence & Clifton Railway, to be built from Florence, Ala., to Clifton, Tenn. While the charter was signed by residents of Chattanooga, the parties interested are Eastern people. Further particulars about the enterprise may be shortly made public.

Would Make Cotton Cord and Strings

Lewis D. Pace, No. 1347 Rhode Island avenue N. W., Washington, D. C., writes to the Manufacturers' Record:

"I am interested prospectively in the manufacture of cotton into seine cord, wrapping twine, rope, corset strings and other strings, and am desirous of obtaining reliable data touching the relation of the demand to the supply of these articles in the United States, and also the average of profit derived from this line of industry."

Lumber Notes.

Texas lumbermen are gratified at a recent reduction of 10 cents per 100 pounds on lumber from Texas to Mexican points made by the Southern Pacific system, and expected to result in greatly extending the market in Mexico for Texas lumber.

Under the guidance of representatives of the national bureau of forestry a party of Prussian forestry experts made an inspection last week of the forest conditions and the lumber-manufacturing centers of Texas.

Two logs recently sent from Bolivar, Tenn., to a Northern market measured 57 inches and 61 inches in diameter, and had an approximate number of 2107 and 2460 square feet, respectively.

Lumber brokers at Mobile have received from the purchasing agent of the Panama Canal Commission specifications for more than 2,000,000 feet of pine lumber.

It is announced that Kountze Bros. have chartered four steamships, which will make regular trips between Sabine, Texas, and the Atlantic seaboard ports, particularly New York.

MECHANICAL**Overhead Carrying Track.**

The overhead carrying track shown in the accompanying engravings will be of special interest to founders, machinists and other manufacturers.

With the present sharp competition the efficient handling of materials is of vital

edges, thus reducing to a minimum the loss due to friction.

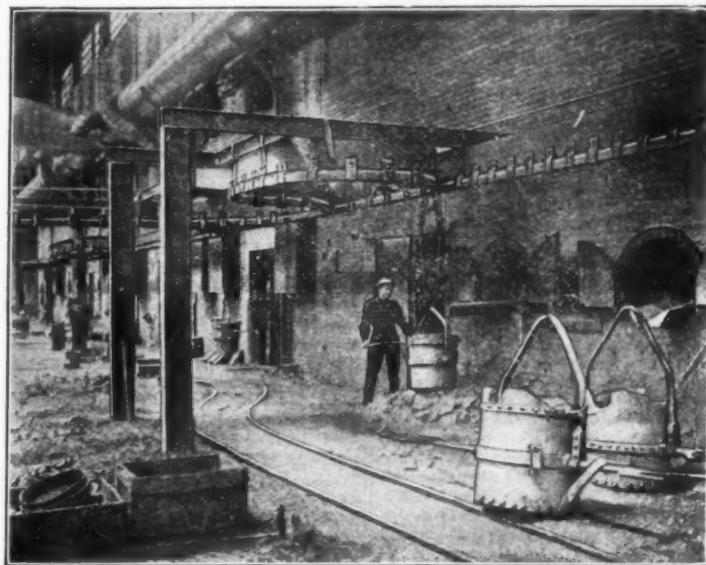
The track is open at the bottom only, so that the working parts are protected from dust and dirt.

The track can be curved to a very small radius, around which the trolleys will easily travel.

The switches are positive in action, but one motion (a downward pull) being

Work up to 5000 or 6000 pounds can be handled in this way, but for heavier work crane service is desirable, though for special work the track can be furnished up to 14,000 pounds capacity.

In foundries where it is desired the pouring and other operations can be made continuous, each operation of the work being carried on separately and independent of each other, one follow-



OVERHEAD SYSTEM IN USE.

importance to the majority of manufacturers, a condition which they have been quick to recognize.

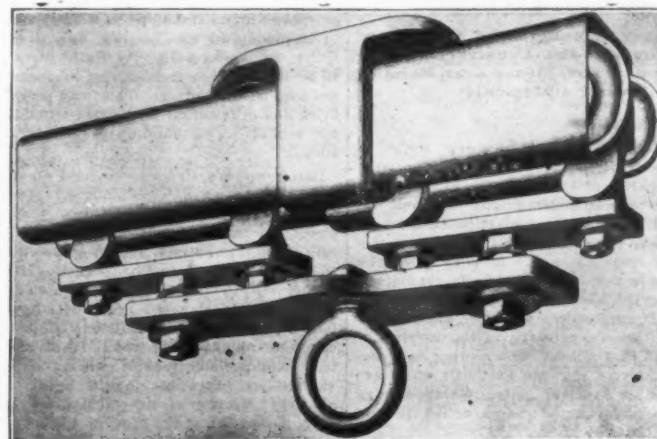
The manufacturer who can produce at less cost than his competitors has a decided material advantage, the direct result of which is a larger profit.

Among the various ways adopted to reduce operating expenses, overhead carrying systems form one of the most important.

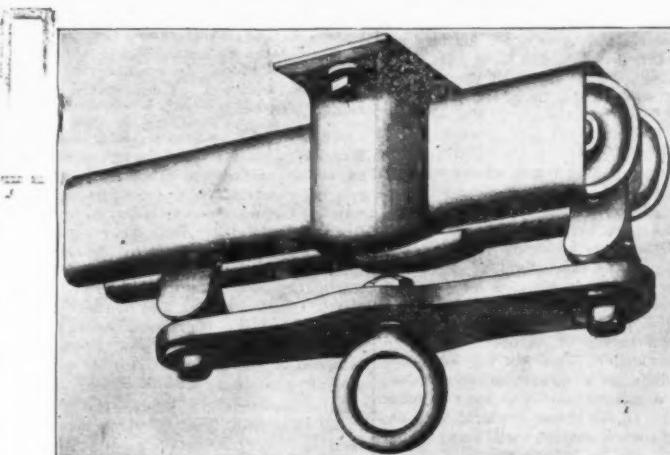
necessary to set the switch as desired. The trolleys are roller-bearing, light and strong.

No one who has not had experience with this method of handling material can appreciate the ease with which work can be done nor the many ways in which tracking systems can be utilized.

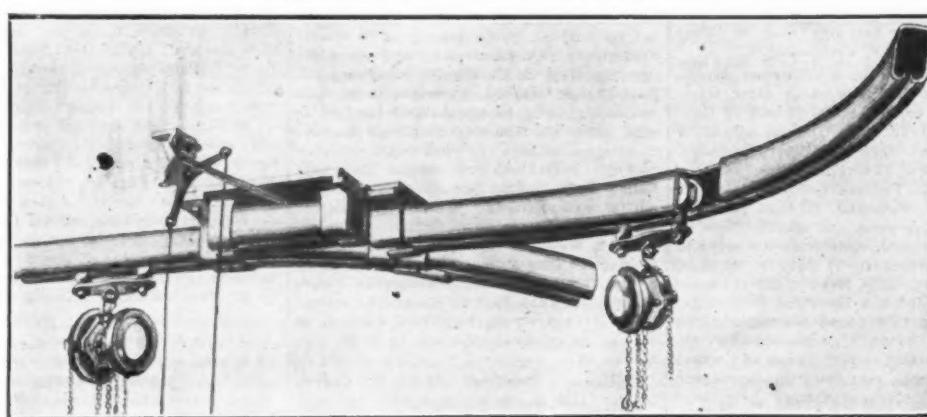
For instance, in a foundry it can be used for handling core boxes, drawing castings, to place copings, pouring metal,



OVERHEAD CARRYING TRACK.



OVERHEAD CARRYING TRACK.



OVERHEAD TRACKING SYSTEM.

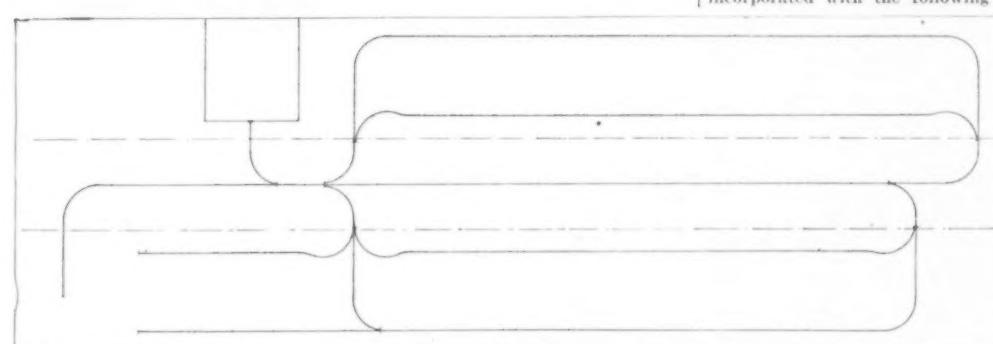
Material can be handled much cheaper and quicker than by hand, a less number of men are required, and floor space is saved.

There are several styles of overhead tracking, each of which possesses many points of merit, but for general foundry and machine-shop use the manufacturers consider that the Coburn trolley track gives the best results.

This track is made of drawn sheet steel, and, as will be seen, is of a special form, the edges being turned inward and upward, forming a trough on each side in which the trolley wheels travel, and no mechanic need be told that this shape secures a maximum strength. This trough shape also offers a minimum resistance to the trolley wheels, thus making it possible to handle heavy loads with ease. It also insures the trolleys traveling in the center of the track at all times; the wheels cannot come in contact with the sides of the track, nor the trolley pendant with the

and for carrying the castings to the cleaning-room.

With an overhead tracking system one man can handle and pour a 2000-pound ladle of metal easier than two men could carry and pour a 100-pound ladle by hand.

PLAN OF OVERHEAD TROLLEY-SYSTEM
Scale 1/4" = 1'

OVERHEAD CARRYING TRACK.

There is no limit to the systems which can be designed for this track, and it is stated this is the only track where two lines can cross at right angles without the use of a switch, turntable or movable parts, the junction being rigid.

W. K. Fogg, president; F. G. McPeak, vice-president; J. T. Anderson, secretary; W. H. Eddleman, treasurer. Work will commence on construction at once, and the company expects to be ready for business by January 1.

Construction Department

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY.

The MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns, a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

BALTIMORE BUILDING NOTES.

Business Buildings.

Baltimore—Warehouse.—The Johns Hopkins Hospital trust estate, 211 North Charles street, has awarded contract to Merritt & Co., contractors, 102 Ridge avenue, Philadelphia, Pa., for the construction of warehouse to be located on Lombard, Light, Ellicott and Water streets, after plans and specifications by Parker & Thomas, architects, 612 North Calvert street. Structure to be five stories high with basement, 110x50x5x97 feet. Reinforced concrete construction will be used in the entire construction of the building, including all walls, floors, beams, girders, columns, stairways and roof; vault doors; coal chute; galvanized-iron skylight; metal frames and sashes glazed with wireglass; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevators. Electric wiring and fixtures, heating system and elevators not included in contract. Merritt & Co. are represented in Baltimore by John H. Herrick, 29 Rippel Building, 7 Clay street. This building previously mentioned.

Baltimore—Store Building.—Mrs. Jette Levy will erect store building to be located at 211 East Baltimore street, after plans and specifications by J. E. LaFerty, architect, Builders' Exchange Building, 2 East Lexington street. Structure to be three stories high with basement, 19.3x73.8 feet; brick with granite base and terra-cotta and brownstone trimmings; concrete foundation; steel beams; galvanized-iron cornice; metal frames and sashes glazed with wireglass; vault lights; electric wiring and fixtures; sanitary plumbing; heating system. James Worthington, 129 North Calhoun street; J. H. Miller, 110 Dover street; E. Eyring, 28 North 3d street E.; W. H. Porter & Son, 705 East Forrest street, and John A. Sheridan Company, 321 North Holliday street, have been selected to bid on the construction. Bids to be in September 27.

Baltimore—Tower.—The Municipal Board of Awards, City Hall, have awarded contract to John Stack & Sons, builders, 256

West Preston street, for the construction of masonry around standpipe on Roland avenue, after plans and specifications by Alfred M. Quick, water engineer, City Hall. Structure to be 184 feet high and 36.4 feet in diameter; granite base; Indiana limestone pedestal; brick and ornamental terra-cotta trimmings; cast-iron columns; slag roofing; vault lights; galvanized-iron cornice and marquise; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. This building previously mentioned.

Baltimore—Warehouses.—Revised plans and specifications have been made by Hoyt & Mackintosh, architects, 11 East Pleasant street, for two warehouses for Stewart Darrell, 414 St. Paul street, agent for the owners, to be located at 45 and 47 South Gay street. Structures to be four stories high with basement, 49.6x81 feet; brick with granite base and artificial and sandstone trimmings; concrete foundations; steel beams; cast-iron columns; slag roofing; tile coping; galvanized-iron skylight; vault lights; fire shutters; electric wiring and fixtures; sanitary plumbing; steam-heating system; two electric elevators. Charles L. Stockhausen, 414 East Fayette street; John Cowan, 106 West Madison street; John A. Sheridan Company, 221 North Holliday street; Henry S. Rippel, 7 Clay street, and Wm. Steele & Sons, 17 West Saratoga street, have been selected to bid on the construction. Bids to be in October 1. These buildings previously mentioned.

Baltimore—Warehouse.—The Mercantile Warehouse Co. has been incorporated, with an authorized capital stock of \$50,000, for erecting a warehouse and conducting a forwarding and warehousing business, by Albert G. Ober, 702 Fidelity Building, Charles and Lexington streets; Wm. G. Scarlett, 729 East Pratt street; Lloyd L. Jackson, 1210 North Charles street; Andrew C. Tripp, 37 North Charles street, and Reuben Foster, 530 Light street. The company has applied for 100,000 feet on Pier 5, and if this is obtained it is proposed to erect a six or seven-story warehouse on the site.

Baltimore—Printing Plant.—The International Syndicate, 17 Little Sharp street, has been incorporated, with an authorized capital stock of \$10,000, to conduct a printing and publishing business, by Wm. R. Miller, 17 Little Sharp street; Robert M. Miller, 17 Little Sharp street; Howard E. Miller, 17 Little Sharp street; Carville D. Benson, northeast corner Saratoga and St. Paul streets, and Miller R. Creighton, Jr.

Baltimore—Warehouses.—Further details have been obtained concerning three warehouses to be erected at 18, 20 and 22 Hanover street for James T. Dennis, Alexander Yearley & Sons, agents, Builders' Exchange Building, 2 East Lexington street, and the Johns Hopkins University trust estate, R. Brent Keyser, chairman, 14 East Mt. Vernon Place, after plans and specifications by J. Appleton Wilson, architect, 303 Courtland street. Structures to be five stories high with basements, 35x107 feet; brick with granite sills and Indiana limestone trimmings; concrete foundations; steel beams; cast-iron columns; tin roofing; galvanized-iron cornices and skylights; metal frames and sashes glazed with wireglass; vault lights; electric wiring and fixtures; sanitary plumbing; steam-heating system; three electric elevators; one hand elevator; three pavement lifts. George Bunnecke & Sons, 305 St. Paul street; William Steele & Sons, 17 West Saratoga street; Henry S. Rippel, 7 Clay street; Burnham & Wells, Builders' Exchange Building, 2 East Lexington street, and Morrow Bros., 212 Clay street, have been selected to bid on the construction; bids to be in September 29.

Baltimore—Warehouse.—William A. Gaunt, 16 East Lexington street, has awarded contract to McIver & Piel, builders, Builders' Exchange Building, 2 East Lexington street, for the construction of warehouse to be located at 9 East Lexington street after plans and specifications by Haskell & Barnes, architects, Central Savings Bank Building, 3 East Lexington street. Structure to be four stories high with basement, 26x10 feet; brick with granite base and stone trimmings; concrete foundation; steel beams; cast-iron columns; galvanized-iron cornice and skylight; electric wiring and fixtures; sanitary plumbing; steam-heating system. Heating system not included in contract. This building previously mentioned.

Baltimore—Store Building.—Further details have been obtained concerning store building to be erected at northeast corner Baltimore and Holliday streets for Randolph Barton, 207 North Calvert street, as trustee for Mrs. Wm. R. Miller and daughters and Charles W. Linthicum, after plans and specifications

by Wyatt & Nolting, architects, Builders' Exchange Building, 2 East Lexington street. Structure to be three stories high with basement, 30x106.6 feet; brick with granite base and ornamental terra-cotta trimmings; concrete foundation; steel beams and girders; cast-iron columns; slag roofing; vault lights; galvanized-iron cornice and marquise; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. This building previously mentioned.

Baltimore—Warehouse.—Henry White, Baldwin & Frick, agents, 24 North Charles street; the Thomsen estate, Hinkley & Morris, attorneys, 215 North Charles street, and the Taylor estate, Robt. A. Taylor, trustees, 8 Builders' Exchange Building, 2 East Lexington street, have commissioned Wyatt & Nolting, architects, Builders' Exchange Building, 2 East Lexington street, to prepare plans and specifications for warehouse to be located at 13 and 15 West Baltimore street and 8, 10, 12, 14, 16 and 18 West German street. Structure to be six stories high with basement, 40 feet on Baltimore street, 118 feet on German street and 202 feet deep; brick with terra-cotta trimmings; concrete foundation; steel beams and girders; cast-iron columns; tin or slag roofing; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevators. Armstrong, Cator & Co., wholesale milliners, 106 and 108 Hopkins Place, will occupy the building.

Baltimore—Store Building.—Mrs. Charles Gaddess has awarded contract to Wm. H. Porter & Son, builders, 505 Forrest street, for the construction of store building to be located at southwest corner Charles and German streets after plans and specifications by George G. Davis, architect. Structure to be three stories high with basement, 18.6x60.4 feet; brick with limestone trimmings; concrete foundation; steel beams; slag roofing; galvanized-iron cornice and skylight; electric wiring and fixtures; sanitary plumbing; elevator; cost to be about \$6000.

Baltimore—Dwellings.—George N. Numsen, Kate avenue, Arlington, has awarded contract to J. F. Hardy, builder, West Arlington, for the construction of two dwellings to be located on Reisterstown road, near Kate avenue. Structures to be two and one-half stories high with basements, each 26x30 feet; frame construction; stone foundation; slate roofing; gas fixtures; sanitary plumbing; furnace-heating system; cost to be about \$5000.

Baltimore—College.—Warren H. Sadler, president of Sadler's Bryant & Stratton Business College, 715 North Eutaw street, has purchased the property located at 903 and 905 North Eutaw street, and will erect on the site, which is 60x140 feet, a business college.

Baltimore—Warehouse.—Further details have been obtained concerning warehouse for Stewart Darrell, 414 St. Paul street, agent for the owners, to be erected at 38 South Frederick street after plans and specifications by Hoyt & Mackintosh, architects, 11 East Pleasant street. Structure to be four stories high with basement, 23x76 feet; brick with sandstone trimmings; concrete foundation; steel beams; cast-iron columns; slag roofing; galvanized-iron cornice and skylight; vault lights; fire shutters; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric elevator. Brady & Watters, 522 St. Paul street; Henry S. Rippel, 7 Clay street; Thomas B. Stanfield & Son, 109 Clay street; Charles L. Stockhausen, 414 East Fayette street; R. Diffenbach, 15 Clay street, have been selected to bid on the construction; bids to be in September 29.

Baltimore—Dwellings.—John F. Carter, builder, 1529 North Bruce street, has purchased property located on Franklin street, between Calhoun and Carey streets, and will erect on the site, which is 116.11x117 feet, a number of two-story dwellings.

Baltimore—Office Building.—The German-American Fire Insurance Co., southwest corner Lexington and Gay streets, has awarded contract to Henry Pierson, builder, 1009 Hanover street, for the construction of its office building to be located at southeast corner Baltimore street and Postoffice avenue after plans and specifications by Haskell & Barnes, architects, Central Savings Bank Building, 3 East Lexington street. Structure to be two stories high with basement and subbasement, 18.4x91 feet; Pompeian brick with granite base and terra-cotta and Kibbe stone trimmings; concrete foundation; steel beams; tin roofing; galvanized-iron cornice; metal frames and sashes glazed with wireglass; vault lights; steel ceilings; electric wiring and fixtures; sanitary plumbing; steam-heating system. Heating system not included in contract. This building previously mentioned.

Baltimore—Warehouse.—Charles J. Bonatti, 216 St. Paul street, as agent for F. Y. Dalziel, has awarded contract to J. Franklin Stuckert & Son, architects and engineers, 203 St. Paul street, Baltimore, Md., and 1421 Chestnut street, Philadelphia, Pa., for the construction of warehouse to be located at 33 and 35 South Charles street, after their

own plans and specifications. Structure to be four stories high with basement, 40.2x87 feet; brick with stone trimmings; concrete foundation; steel beams; slag roofing; mill construction; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevator. This building previously mentioned.

Baltimore—Warehouse.—Henry White, Baldwin & Frick, agents, 24 North Charles street; the Thomsen estate, Hinkley & Morris, attorneys, 215 North Charles street, and the Taylor estate, Robt. A. Taylor, trustees, 8 Builders' Exchange Building, 2 East Lexington street, have commissioned Wyatt & Nolting, architects, Builders' Exchange Building, 2 East Lexington street, to prepare plans and specifications for warehouse to be located at 13 and 15 West Baltimore street and 8, 10, 12, 14, 16 and 18 West German street. Structure to be six stories high with basement, 40 feet on Baltimore street, 118 feet on German street and 202 feet deep; brick with terra-cotta trimmings; concrete foundation; steel beams and girders; cast-iron columns; tin or slag roofing; electric wiring and fixtures; sanitary plumbing; steam-heating system; power elevators. Armstrong, Cator & Co., wholesale milliners, 106 and 108 Hopkins Place, will occupy the building.

Baltimore—Warehouse and Pier.—The Baltimore Fidelity Warehouse Co., Albert G. Ober, president, 702 Fidelity Building, Charles and Lexington streets, has engaged Flaherty & Lande, engineers and contractors, 36 Broadway, New York, to construct warehouse to be located along the water front. Structure is to be 100 feet wide and 500 feet long; one-half to be two stories high and the other half one story high; concrete block exterior and reinforced concrete floors, beams and roof. The company has acquired about 342,000 square feet of land with a water frontage of 110 feet, and it is intended in the near future to construct a modern dock 75x100 feet.

Baltimore—Club Building.—The Merchants' Club, 330 St. Paul street, has awarded contract to Morrow Bros., builders, 212 Clay street, for the construction of its club building to be located on German street, near South street, after plans and specifications by Sperry, York & Sawyer, architects, Builders' Exchange Building, 2 East Lexington street. Structure to be four stories high with basement, 48x85.5 feet; brick with marble or Indiana limestone exterior; concrete foundation; steel beams and girders; cast-iron columns; tin roofing; copper cornice; six skylights; fire shutters or metal frames and sashes; granolithic pavement; vault lights; electric wiring and fixtures; sanitary plumbing; steam-heating system; five dumbwaiters; power elevator. Heating system, electric and telephone wiring, elevator car and machinery, hand-lift car and machinery, hot-water heater, range, steam tables, dish-warmers and cook tables not included in contract. This building previously mentioned.

Baltimore—Dwellings.—Edward J. Galagher, builder, 2638 East Baltimore street, will erect, after his own plans and specifications, seven dwellings to be located on Montford avenue, near Jefferson street. Structures to be two stories high with basements, 12.4x40 feet; brick with stone trimmings; tin roofing; galvanized-iron cornice; gas fixtures; sanitary plumbing; cost to be about \$5600.

Baltimore—Conservatory.—The Municipal Board of Awards, City Hall, has awarded contract to Lord & Burnham Company, horticultural architects and builders, Irvington-on-the-Hudson, N. Y., for the construction of conservatory to be located in Patterson Park; contract price \$13,225. This building previously mentioned.

Manufacturing Buildings and Other Enterprises.

Baltimore—Cooperage Plant.—Frederick Albrecht, 522 Cedar alley, near Greene street, has awarded contract to Thomas B. Stanfield & Son, builders, 109 Clay street, for the construction of building to be located at southeast corner Pratt and Smallwood streets. Structure to be two stories high, 50x61 feet; brick with stone trimmings; concrete foundation; steel beams; cast-iron columns; sanitary plumbing; steam-heating system. Heating system not included in contract. This building previously mentioned.

Baltimore—Warehouse.—Charles J. Bonatti, 216 St. Paul street, as agent for F. Y. Dalziel, has awarded contract to J. Franklin Stuckert & Son, architects and engineers, 203 St. Paul street, Baltimore, Md., and 1421 Chestnut street, Philadelphia, Pa., for the construction of warehouse to be located at 33 and 35 South Charles street, after their

Thomas, Wm. A. Delahay, Edwin A. Nice and Harry W. Nice. This company succeeds W. E. Arnold & Co., 406 South Euclid street.

Baltimore — Brush Factory. — Rennous Klein & Co., brush manufacturers, 846 Frederick avenue extended, will erect building after plans and specifications by J. E. Lafferty, architect. Builders' Exchange Building, 2 East Lexington street. Structure to be one story high, 60x60 feet; brick with stone trimmings; concrete foundation; steel beams. Frederick Decker & Sons, 1209 East Biddle street; J. H. Miller, 110 Dover street; Wm. H. Porter & Son, 505 East Forrest street; C. C. Watts, 113 Hamilton street, and McIver & Piel, Builders' Exchange Building, 2 East Lexington street, have been selected to bid on the construction. Bids to be in September 24.

Baltimore — Patrol System. — The Holmes Electric Protective Co. has been incorporated with an authorized capital stock of \$100,000 to establish a fire, property and police-patrol system and to operate electric lines in this connection, by Edwin T. Holmes and Robert A. C. Smith of New York, Henry B. Wilcox, Saratoga and Sharp streets; Henry K. McCay, 217 North Calvert street, and Charles T. Crane, Charles and Saratoga streets.

Baltimore — Railway Supplies. — The Universal Railway Supply Co. has been incorporated with an authorized capital stock of \$25,000, for dealing in all kinds of railway supplies, by George W. Smith, 322 North Charles street; James G. Armacost, 21 West Lexington street, both of Baltimore, Md.; Samuel K. Dennis, Worcester county, Maryland; Benjamin W. Nunnally, Manchester, Va., and James C. Battis, Norfolk, Va.

Baltimore — Cold-storage Plant. — The Agriculturist Commercial Storage Co. is contemplating the erection of a large six-story cold-storage warehouse for the storage of fruits, fowls and other perishable produce. The company has applied for space on one of the city piers. Howard Tebbes, 19 Builders' Exchange Building, 2 East Lexington street, is representing those interested in the enterprise.

Subbids Wanted.

Mention of contractors wanting subbids on construction work and material will be found, when published, in the "Machinery Wanted" column on another page under the heading of "Building Equipment and Supplies."

ALABAMA.

Birmingham — Cotton Mill. — It is reported that T. R. Trainer of Chester, Pa., is investigating the Birmingham territory for site on which to locate a cotton mill. An equipment of 10,000 spindles is contemplated.

Cullman — Telephone System. — S. L. Sherill, owning the Hartsville telephone system, Hartsville, Ala., has purchased the half-interest of E. T. Gable in the Cullman Telephone Co. The two lines will be consolidated and the systems improved and extended.

Enterprise — Cotton Gin. — Enterprise Gin & Warehouse Co. will rebuild cotton gin reported burned last week; capacity 100 bales a day; J. A. Adams, engineer in charge.

Eufaula — Cotton Mill. — It is reported that the Eufaula Cotton Mills will make important improvements to its plant before resuming operations for the season.

Gadsden — Knitting Mill. — R. L. Adams is organizing a company, to have capital stock of \$10,000, for the erection of a mill for knitting shirts. Building has been secured; daily output to be 200 dozen.

Mobile — Coal Company. — Incorporated: Bogue & Kunz Coal Co., with \$3000 capital. F. A. Bogue is president and general manager, and Edward J. Kunz, secretary-treasurer.

Sylacauga — Marble-finishing Plant. — Alabama White Marble Co. is arranging for the installation of finishing plant.

ARKANSAS.

El Dorado — Cotton Compress. — Farmers' Compress & Cotton Co. has been incorporated, with \$50,000 capital, to operate a cotton compress, etc.; incorporators, B. W. Reeves, N. P. Sloan, Henry W. Sloan, William S. Sloan and Neil C. Marsh.

Hot Springs — Telephone System. — It is reported that Barber & Bratley of Toledo, Ohio, have purchased from W. H. Crumb the local telephone plant and will expend about \$75,000 in improvements.

Imboden — Improvement Company. — Imboden Improvement Co. has been incorporated, with \$5000 capital. H. W. Clapton is president; M. H. Long, vice-president; C. C. Bacon, secretary, and M. F. Henderson, treasurer.

Mammoth Spring — Cotton Gin. — Mammoth

Spring Cotton Ginning Co. has been organized by J. E. Ford, H. N. Simons, Hugh Erwin, G. T. Wood and Elmer Cooper. Iron-clad building, 30x50 feet and 16 feet high, will be erected.

FLORIDA.

Braidentown — Canal. — County Commissioners of Manatee county have awarded contract for the construction of the Cedar Hammock canal to the Guarantee Construction Co. of New York, represented by Chas. L. Inslée.

Cocoa — Telephone System. — Brevard County Telephone Co. has been incorporated, with \$5000 capital, by H. S. Williams, Joseph Paxton, G. S. Harde, S. S. Jones and R. N. Andrews, to operate a telephone system.

Jacksonville — Timber Company. — P. L. Sutherland, Arthur Meigs, Arthur F. Perry, D. H. McMillan and others have incorporated the Crescent Timber Co. with \$100,000 capital.

Jacksonville — Telephone System. — Jacksonville Telephone Co. has been reorganized, with \$100,000 capital, by J. C. L'Engle, Dr. W. Hume Shine and D. T. Gerow, to take over and operate an established plant. New equipment will be installed and other improvements made.

Jacksonville — Cooperage Plant. — The Cooperage Company, previously reported incorporated with \$100,000 capital, has elected J. C. Little, president; John E. Harris, vice-president, and C. H. Barnes, secretary-treasurer.

Jacksonville — Telephone System. — Jacksonville Telephone Co. has been reorganized, with \$100,000 capital, by J. C. L'Engle, Dr. W. Hume Shine and D. T. Gerow, to take over and operate an established plant. New equipment will be installed and other improvements made.

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Pensacola — Fertilizer Works. — Pensacola Fertilizer Co. has incorporated, with \$5000 capital, to manufacture and deal in fertilizer, etc. W. D. C. Kessler is president; F. A. Burbridge, vice-president and secretary, and W. E. Craig, treasurer.

Rockwell — Chemical Works. — Barker Chemical Co. has incorporated, with \$500,000 capital, to manufacture and deal in sulphuric acid, acid phosphate fertilizers, etc.; incorporators, Hugh D. Anchincloss, Stephen Baker, John W. Anchincloss of New York, N. Y., and associates.

Tampa — Public Improvements. — Mayor Salomon has vetoed the bond ordinance authorizing the issuance of \$500,000 of bonds for public improvements, and for which an election was previously reported as having been called for November 8.

GEORGIA.

Broxton — Electric-light Plant. — City has granted franchise to A. G. Garbuta to operate an electric-light plant; city to be furnished with illumination at \$70 per light.

Cairo — Water-works and Electric-light Plant. — City will vote October 20 on the issuance of bonds for the construction of water-works and electric-light plant. Address The Mayor.

Camilla — Water-works, Electric-light Plant, etc. — City will vote October 12 on the \$20,000 bond issue, previously reported, for the construction of water-works system, acquiring electric-light plant, etc. Address J. H. Palmer, mayor.

Cedartown — Mercantile. — Incorporated: Brewster Dry Goods Co., by A. C. Brewster and others, with \$8000 capital and privilege of increasing to \$20,000.

Cordele — Planing Mill, Saw-mill, etc. — Aycock Bros. Lumber Co., reported incorporated last week, will erect mill with a daily capacity of 100,000 feet; W. E. Aycock of Moultrie, Ga., engineer in charge. This company was erroneously reported last week under Cordele, Fla.*

Griffin — Cotton Mill. — It is reported that the Rushton Cotton Mills will expend \$25,000 for new machinery.

Jefferson — Furniture Factory. — Smith-Randolph Company contemplates furniture factory. R. S. J. Smith and W. H. Smith can give information.

Rome — Cotton Mill. — Floyd Cotton Mills have expended about \$75,000 for new machinery and improvements and is about to resume operations; equipment 5136 spindles and 112 looms. This plant was reported in January last as purchased by Messrs. Lipscomb & Willingham.

Tennille — Water-works and Electric-light Plant. — City will vote October 25 on the issuance

of bonds for improving water-works system and purchasing electric-light plant. Address The Mayor.

Washington — Ice Factory. — It is reported that an ice factory is contemplated, and O. M. Smith can possibly give information.

Washington — Water-works. — N. Wilson Davis, Harrisonburg, Va., is engineer in charge of city's proposed \$30,000 water-works system.

KENTUCKY.

Bowling Green — Pumping Station. — Charles Herman, C. E., Louisville, Ky., will prepare plans and specifications for city's proposed 3,000,000-gallon pumping engine.

Bowling Green — Brewery. — Reports state that G. W. Snyder contemplates organizing a \$100,000 company to establish brewery.

Cloverport — Pearl-button Factory. — Marian Weatherholt, R. T. Oelze, Dr. A. A. Simons and H. A. Oelze are organizing the Cloverport Pearl Button Factory, Inc., with \$6000 capital. A factory building will be erected, and the plant will have a daily capacity of 200 gross.*

Livermore — Machine Shop and Foundry. — Livermore Iron Works, S. A. Davis & Son, proprietors, are erecting machine shop and foundry.

Louisville — Viaduct. — Board of Public Works has granted a permit to the Louisville & Southern Indiana Traction Co. for the construction of a steel viaduct from the Louisville and Jeffersonville bridge to Wenzel and Franklin streets; cost \$200,000.

Louisville — Candy Factory. — R. A. McDowell, president of the Commercial Club, is in correspondence with St. Louis (Mo.) candy manufacturer relative to the establishment of branch plant at Louisville.

Paducah — Laundry. — Paducah Toilet Co. has incorporated, with \$1200 capital, to conduct laundry; incorporators, Eleanor Trezzvant, W. F. Bradshaw, Jr., and W. F. Paxton.

Sturgis — Electric-light Plant. — J. L. Franklin of the Tradewater Coal Co. is installing electric-light plant at the company's shaft. A system of electric lights for the town is also being contemplated.

Winchester — Flour Mill. — R. C. Mansfield & Son, Rosslyn, Ky., previously reported as to remove flour mill to Winchester, enlarging and improving the plant, will erect frame building and cover with iron sheets and iron roof; capacity 100 barrels flour and 500 bushels of meal.*

LOUISIANA.

Boyce — Water-works. — City has engaged T. W. Sylvester, C. E., Alexandria, La., to prepare plans for proposed \$14,000 water-works plant.

De Ridder — Bottling Works. — De Ridder Bottling Works has been incorporated, with \$5000 capital, to manufacture and bottle carbonated drinks. John T. Smart is president; Tom C. Wingate, vice-president; A. B. Pye, secretary-treasurer, and Aubin Daigle, general manager.

Lake Charles — Planing Mill. — Grant Mustersburgh contemplates improve and enlarging the Lake Charles Planing Mill by the erection of a 60-foot addition, two stories high, costing \$300. New machinery will also be installed.

New Orleans — Realty Company. — Geo. Nicholson Realty Co. has incorporated with \$60,000 capital. George Nicholson is president; Yorke P. Nicholson, vice-president, and Leonard K. Nicholson, secretary-treasurer.

MARYLAND.

Rockville — Wrapper Factory. — The Rockville Merchants and Manufacturers' Association is negotiating with Baltimore (Md.) parties relative to the establishment of wrapper factory.

Towson — Road Improvements. — County Commissioners of Baltimore county contemplate expending about \$35,000 for macadamizing Park Heights avenue, four miles north of the city limits, 74 feet wide. Bids have been asked, but contract has not been awarded.

Washington, D. C. — Lumber and Development Company. — Fred C. Geigle, Eugene Schooley and J. L. Cohencous have incorporated the Tennessee Lumber & Development Co., with \$1,000,000 capital.

MISSISSIPPI.

Columbia — Water-works, Electric-light Plant. — City has granted franchise to M. & R. H. Hemphill, Hattiesburg, Miss., for the construction of water-works and electric-light plant. Board of Trade was reported last month as negotiating with Hattiesburg (Miss.) capitalists relative to the establishment of water-works and electric-light plant costing \$50,000.

Greenville — Knitting Mill. — The Young Men's Business League has completed arrangements for locating a knitting mill.

Greenville — Brick and Tile Works. — Reports state that the Young Men's Business League has completed arrangements for the location of brick and tile works.

Greenville — Wagon Factory. — Reports state that a wagon factory will be established, and the Young Men's Business League can give information.

Greenville — Steam Laundry. — Valley Steam Laundry will erect building 40x100 feet to replace laundry recently burned. B. F. Gray is engineer in charge.*

Leland — Drug Company. — Drs. T. L. Dobson, W. B. Dobson and others have incorporated the City Drug Co. with \$8000 capital.

Lexington — Gin, Warehouse and Compress. — Farmers' Gin, Warehouse & Compress Co. has been incorporated, with \$30,000 capital, by W. P. Roach, C. L. Lundy and others.

Meridian — Telephone-system Improvements. — Cumberland Telephone Co., J. L. Peavy, manager, will enlarge and improve telephone exchange. A flashlight or central-energy telephone system will be installed.

New Albany — Water-works and Electric-light Plant. — Wm. F. and A. D. Wilcox, Jackson, Miss., are preparing plans, specifications, etc., and will superintend the construction of water-works and electric-light plant for which \$20,000 in bonds was reported last month as having been voted by the city. Plans and specifications will be ready October 20.

Panola — Drug Company. — Merchants and Farmers' Drug Co. has incorporated with \$5000 capital.

Philadelphia — Coal Mining. — Albert J. Salter has discovered coal deposits on his property and will arrange for its development.*

Purvis — Manufacturing, etc. — Manar Manufacturing & Realty Co. has been incorporated with \$10,000 capital.

Rosedale — Kaolin Mines, etc. — W. C. Myers is arranging for the development of kaolin mines, and will erect plant for grinding and refining the product.*

Sardis — Ice Plant. — Sardis Ice & Cold-Storage Co., D. L. Rush, manager, will erect five-ton plant, and bids are asked until October 15.

Tupelo — Mercantile. — L. H. Dabbs and associates have incorporated the Tupelo Mercantile Co. with \$50,000 capital.

Water Valley — Railroad Repair Shop. — Illinois Central Railroad Co., H. U. Wallace, chief engineer, Chicago, Ill., states there is no truth in the report mentioned last week that extensive improvements would be made to shops.

West Point — Foundry and Machine Shop. — Gem Stove Co., reported incorporated last week to establish foundry, manufacturing stoves, grates, etc., will also install machine shop. Plant will have a capacity of 700 stoves per month.*

Yazoo City — Grocery Company. — Incorporated: Lightcap Grocery Co., with \$10,000 capital.

MISSOURI.

California — Milling Company. — Gattermeier Milling Co. has been incorporated, with \$5000 capital, by H. A. Wienke, B. M. Gattermeier, G. A. Burkhardt and H. E. Gattermeier.

Joplin — Mining Company. — Incorporated: Independence Zinc Mining Co. of Maine, with \$250,000 capital.

Kansas City — Stone and Supply Company. — Phelps Stone & Supply Co. has been incorporated by Frank N. Phelps, Ada C. Cushing, Effie L. Hoover and others; capital \$45,000.

Kansas City — Oil Company. — Thornton Cook, James Sannard, C. D. Rogers and others have incorporated the Chautauqua crude Oil Co., with \$30,000 capital.

Kansas City — Automobile Works. — Chartered: McClinton Automobile & Engine Co., with \$375,000 capital. Company will manufacture an automobile invented by D. L. McClinton of Fort Wayne, Ind., having an adjustment by which the propelling power can be attached to either the front or rear axle. Hirman Landrus is president.

Monroe City — Oil and Development Company. — Incorporated: Monroe City Oil & Development Co., with \$50,000 capital, by J. M. Proctor, D. D. Davenport, John J. Rogers and others.

Springfield — Construction Company. — Crossen-Badge Construction Co. has been incorporated with \$6000 capital by Geo. E. Badge, James H. Hedges, H. G. Crossen and others.

St. Joseph — Oil and Developing Company. — Incorporated: Federal Oil & Development Co., by William M. Rush, Josiah B. Moss, Robert E. Henderson and others.

St. Joseph—Sausage Works.—Henry J. Mentzel, Henry Snyder and Frederick M. Schwab have incorporated the St. Joseph Sausage Works with \$5000 capital.

St. Louis—Mining.—Texas Lignite Co. has been incorporated by C. E. Darrow, J. C. Hainer of St. Louis, J. H. Smith, Will R. Allen and M. B. Shannon, with \$10,000 capital, to operate coal or lignite mines.

St. Louis—Novelty Works.—Hannings Novelty Manufacturing Co. has incorporated, with \$5000 capital, to manufacture and deal in novelties; incorporators, Charles L. Hannings, Edward C. Van Wagenen, James W. Scott and others.

St. Louis—Baking Company.—Incorporated: Kolf Baking Co., by Albert C. Davis, Jacob Kolf and W. W. Rathbun; capital \$5000.

St. Louis—Shoe Company.—Reader Shoe Co. has been incorporated, with \$34,000 capital, by M. E. Love, C. C. Reader and M. A. Love.

St. Louis—Realty Company.—Ferdinand Rossi, Henry A. Hamilton and Chas. R. Hamilton have incorporated the Rossi Realty Co., with \$25,000 capital.

St. Louis—Telephone System.—Kinloch Telephone Co. has increased capital from \$2,000,000 to \$3,000,000.

St. Louis—Drugs, Chemicals, etc.—Incorporated: Rodes Sanitary Co., with \$10,000 capital, to manufacture and deal in chemicals, drugs, sanitary appliances, etc.; incorporators, C. B. Rodes, J. H. Kelly of St. Louis, Mo., and W. H. Cloney of Sedalia, Mo.

Webb City—Granolithic Company.—C. W. Manker, O. J. Raymond, W. C. Stewart and others have incorporated the Webb City Granolithic Co. with \$7000 capital.

NORTH CAROLINA.

Concord—Drug Company.—P. B. Fetzer, J. G. Green and B. C. Griffin have incorporated the Fetzer Drug Co. with an authorized capital of \$50,000.

Fayetteville—Bleachery.—It is reported that the New York Bleachery Co., John Arlington, secretary, New York, N. Y., contemplates building a bleachery at Fayetteville, N. C.

Gibson—Brick Works.—Green Pond Granite Brick Co. has been incorporated, with an authorized capital of \$25,000, by Z. V. Fate, J. A. Jones, John F. McNair and others.

High Point—Knitting Mill.—J. H. Mills and associates will establish a knitting mill. They will erect building two stories high, 30x40 and 60x100 feet, to hold the machinery.

High Point—Furniture Factory.—Standard Furniture Co. has been incorporated, with \$4500 capital, by E. M. Armfield, O. S. Richardson and Junius Wrenn.

Kernersville—Telephone System.—W. C. Linville, C. V. and M. V. Fulp, A. N. Linville and others have incorporated the Kernersville Telephone Co., with \$5000 capital, to construct and operate telephone system.

Newbern—Saw-mill.—Newbern Lumber Co. previously reported incorporated with \$125,000 capital to operate saw-mills, will erect mill building 48x116, kiln, four-room, 100 feet long, to manufacture rough pine lumber; mill to be a double circular, with about 70,000 feet daily capacity.

Randleman—Creamery.—Randolph Creamery has been incorporated, with an authorized capital of \$25,000, by W. F. Talley, D. M. Mendenhall, A. W. Bulla, S. E. Coble and J. F. Beeson.

Rocky Mount—Knitting Mill.—R. Braswell, J. C. Branch, George S. Edwards and T. P. Braswell have incorporated the Rocky Mount Hosiery Co. to establish hosiery mill; capital stock is \$100,000.

Scotland Neck—Knitting Mill.—The Scotland Neck Cotton Mills has begun the erection of an addition 40x150 feet, two stories high, for offices, cloakroom, etc., and some additional machinery will probably be installed. Company operates a knitting mill for hosiery and underwear.

Spencer—Building-material Factory.—It is reported that a \$20,000 stock company is being organized for the manufacture of building material, and a planing and saw mill will be erected. W. G. Anderson is interested.

Weldon—Cold-storage Plant and Steam Laundry.—It is reported that a cold-storage plant and steam laundry will be established. F. W. Garrett and W. T. Shaw can give information.

SOUTH CAROLINA.

Chester—Cotton Mill.—The Springstein Mills has begun the erection of an additional building two stories high, 50x116 feet, in which is to be installed 6048 spindles; opening and prepared machinery and additional dyeing apparatus will also be installed. Company's present equipment is 8064 spindles and 922 looms.

Columbia—Carriage Company.—J. M. Canney, Chas. H. Evans and Chas. D. Miller have incorporated the Columbia Carriage Co., with \$3000 capital, to deal in automobiles, bicycles and vehicles generally.

Darlington—Cotton Mill.—It is reported that the Darlington Manufacturing Co. will add 12,000 spindles.

Easley—Cotton Mill.—The Glenwood Cotton Mills has installed additional 2000 spindles and 36 looms.

Eastover—Vehicle and Repair Company.—Incorporated: Eastover Vehicle & Repair Co., with \$1000 capital, by Harry G. Bates, Julian A. Byrd, E. C. Touchberry, Dr. L. M. Hook and C. P. Henry.

Greenville—Cotton Mill.—The Woodside Cotton Mills has amended its charter, increasing capital from \$200,000 to \$400,000, in accordance with the decision announced last May. As stated then, the company is to erect an additional building to hold 30,720 spindles and looms to match.

Greenville—Mercantile.—J. B. Bruce, R. W. Bruce, W. W. Bates and J. C. McElroy have incorporated as the People's Store, with \$50,000 capital, to succeed the H. K. Sturdivant Company.

Hartsville—Vehicle Works.—Chartered: Hartsville Buggy & Carriage Co., with \$5000 capital.

Laurens—Drug Factory.—John A. Madden, A. E. Hill and T. J. Duckett have incorporated the New Discovery Medicine Co., with \$5000 capital.

Marietta—Saw-mill.—Stevenson Lumber Co. of Lock Haven, Pa., contemplates erecting saw-mill.

Marion—Lumber Mills.—Marion County Lumber Co., previously reported incorporated with \$300,000 capital, has completed organization with E. M. Wiley of New York, president; J. L. Camp of Franklin, Va., vice-president; C. C. Vaughan, Jr., of Franklin, Va., secretary; John Harker of New York, treasurer, and John A. Arringdale of Wilmington, N. C., general manager. Company will manufacture lumber and other products of wood.

McClellanville—Steamboat Company.—Chartered: McClellanville Steamboat Co., with \$6000 capital, to operate a steamboat from McClellanville to Charleston, S. C. S. C. Dear is president; H. T. Morrison, vice-president; T. W. Graham, Jr., secretary; F. R. Baker, treasurer, and W. A. King, manager.

McClellanville—Cannery.—Incorporated: McClellanville Canning Co., with \$2500 capital.

Orangegburg—Telephone System.—W. E. L. Culler, J. G. Smith and W. W. Culler, Jr., have incorporated the Orangegburg & Raymond Telephone Co., with \$10,000 capital, to construct telephone line from Orangegburg to Raymond.

Walterboro—Drug Company.—Palmetto Drug Co. has been incorporated by Dr. L. B. Salters and W. N. Jacobs.

Walterboro—Telephone System.—C. C. Tracy of Walterboro, T. B. Whatley of Gillisonville, S. C., and W. F. Grays of Grays, S. C., have incorporated the Colleton County Telephone Co., with \$5000 capital, to operate in Colleton and adjoining counties.

TENNESSEE.

Chattanooga—Brewery Depot.—It is reported that the Lexington Brewery Co., Lexington, Ky., contemplates establishing plant.

Chattanooga—Power-house.—Chattanooga Brewing Co. will erect power-house; steel frame with concrete construction.

Clarksville—Lumber Mill.—W. F. Coulter Mill & Lumber Co. has been organized with \$50,000 capital.

Clinton—Iron Foundry.—Clinton Iron Works, reported incorporated last month with \$5000 capital, has completed organization with C. J. Sawyer, president; A. Taylor, vice-president, and C. H. Johnson, general manager. Company is investigating site on which to erect plant.

Cookeville—Water-works.—City contemplates issuing bonds for the construction of water-works. Address The Mayor.

Crossville—Oil Wells.—It is reported that J. M. Steele and associates of Pittsburg, Pa., and associates are purchasing and will develop oil properties near Crossville.

Harriman—Tannic-acid Plant.—The Manufacturers' Record is informed that the American Oak Leather Co. of New York is negotiating with a view to establishing tannic-acid plant.

Hartsville—Tobacco Factory.—R. G. Owen & Son of Eagleville, Tenn., are erecting building 60x120 feet, three stories high, which will be equipped for the manufacture of smoking, twist and plug tobacco, having a daily capacity of 1000 pounds.

Henderson—Hat and Cap Factory.—H. Rosenthal of Memphis, Tenn., will remove his hat and cap manufacturing plant to Henderson.

Nashville—Carbon-paint Plant.—Reports state that J. S. Henderson has secured 1400 acres of land in Davidson and Cheatham counties containing black shale deposits, and with Northern capitalists will organize \$1,000,000 company for the establishment of plant for the manufacture of carbon paint. Building will be erected of brick and steel, and machinery installed at a total cost of \$50,000; plant will have a daily output of 50 tons. About \$200,000 will be expended on opening the mines and building railroad spur.

Nashville—Wagon Supplies.—It is reported that J. T. Davidson, president, and G. M. Mitchell, general manager of the American Skein & Foundry Co., Chicago, Ill., are investigating with a view to establishing branch plant for the manufacture of wagon supplies.

Pulaski—Tobacco Factory.—J. Bugg Tobacco Co. has purchased site on which to erect brick factory building 130x40 feet, having a dryroom 24x12 feet.

Springfield—Tobacco Factory.—B. F. Moore & Co. have begun the erection of tobacco factory.

TEXAS.

Alice—Grist Mill and Cotton Gin.—B. F. Wolters, Louis Trautman and S. P. Nave have incorporated the Alice Mill & Gin Co., with \$6000 capital.

Alvarado—Electric-light Plant.—Alvarado Water, Light & Power Co. has purchased from E. Quillitch electric-light plant at \$6000; plant will be removed to pumping station.

Austin—Cement Plant.—Reports state that extensive cement deposits have been discovered near Austin, and a plant will be erected for manufacturing the cement. Ex-Governor J. D. Sayers and Dr. B. M. Worsham are interested.

Batson—Oil Wells.—Coxey Oil Co. has been incorporated by R. C. Parks, E. T. Polk of Batson, W. F. Brice, G. C. O'Brien and R. A. John of Beaumont, Texas.

Denton—Flour Mill.—Alliance Milling Co. has increased capital from \$100,000 to \$160,000.

Dallas—Glass Factory.—It is reported that J. F. Zang is endeavoring to interest local parties in the organization of \$100,000 company to establish glass factory.

Dallas—Street Paving.—City contemplates paving Bryan street between Garrett avenue and Hall street; cost \$22,000. Address City Engineer.

El Paso—Gas Works.—City has granted franchise to O. H. Bosworth of Chicago, Ill., to operate gas plant.

Fort Worth—Iron and Steel Works.—Fort Worth Iron & Steel Manufacturing Co. reported incorporated last week with \$200,000 capital, has completed organization with W. K. Fogg of Alliance, Ohio, president; F. G. McPeak, vice-president; J. T. Anderson, secretary, and W. H. Eddiman, treasurer. Company will at once arrange for the erection of plant for manufacturing bar and round iron, steel and iron forgings, nuts, bolts, etc.

Fort Worth—Ice and Cold-storage Plant.—North Fort Worth Ice & Cold Storage Co., recently reported incorporated with \$50,000 capital to build ice and cold-storage plant in North Fort Worth, will erect building 100x150 feet, costing \$35,000.

Groveton—Saw-mill.—Trinity County Lumber Co. is rebuilding saw-mill recently reported burned at a loss of \$120,000.

Lancaster—Water-works System.—Citizens' Water Co., reported incorporated last week with \$2000 capital, was formed to extend the city's water-works.

Longview—Telephone System.—Lacey Telephone Co. has been incorporated, with \$35,000 capital, by J. C. Lacey, Edwin Lacey, J. W. Yates and others.

Lufkin—Printing Plant and Office Building.—G. E. Watkins, proprietor Lufkin Tribune, has purchased site on which to erect printing plant and office building.

Rusk—Water-works.—Town has under contemplation the establishment of system of water-works. Address Town Clerk.

San Angelo—Cattle-dipping Plant.—It is reported that a stock company will be organized by J. L. Conway and associates for the establishment of plant for dipping cattle at a cost of \$3000; to have a daily capacity of 1000 head.

San Antonio—Printing Plant.—Chartered: Johnson Bros. Printing Co., with \$10,000 capital, by Josephine H. Johnson and others, to conduct printing and publishing business.

Sherman—Iron and Brass Foundry.—Eastwood & Mankin will erect ironclad building 200x65 feet to replace plant recently reported

burned at a loss of \$20,000. Electricity will be used for lighting.*

Waco—Cotton Mill.—L. C. Todd, vice-president of the Waxahachie Cotton Mills of Waxahachie, Texas, contemplates building a cotton mill in Waco. A \$400,000 plant is talked of.

Wichita Falls—Electric-light Company.—R. C. Malone, Frank Kell of Wichita Falls, M. Lasker, I. H. Kempner of Galveston, Texas, and Henry Syales of Abilene, Texas, have incorporated the Wichita Falls Electric Co. with \$15,000 capital.

VIRGINIA.

Courtland—Mercantile.—E. C. Magett Mercantile Co. has been incorporated, with \$5000 capital, by W. P. Gillette and others.

Gravel Hill—Publishing.—A stock company is being organized to establish a weekly newspaper, and John K. White is promoting the enterprise.*

Harrisonburg—Electric-light and Power Plant.—City has let contract to Heatwole & Van Pelt at \$4419 for construction of powerhouse at Shenandoah river; to W. C. Switzer at \$3700 for constructing 12 miles of transmission line from power station to town; also for installation of turbines, shafting, etc., at power plant, in connection with electric-light and power plant, previously reported.

Montross—Flour Mill.—Reports state that L. R. Cook contemplates erecting 30-horse-power roller-patent flour mill.

Norfolk—Lumber Mill.—Incorporated: Planters' Manufacturing Co., with an authorized capital of \$25,000, to manufacture lumber. Willis J. Lee is president; Millard F. Parker, vice-president; R. T. Hargrove, secretary, and John S. Jenkins, treasurer.

Norfolk—Land Company.—Incorporated: East Ocean View Land Co., with \$15,000 capital, by William H. Garrett, Claude B. Garrett and associates.

Norfolk—Oyster Packers.—Hemingway Packing Co. has increased capital from \$10,000 to \$25,000.

Petersburg—Lumber and Box Company.—Appomattox Lumber & Box Co. has been incorporated, with an authorized capital of \$25,000, by William J. Jones, Arthur B. Wood, Bartlett Roper, Jr., and W. A. Bond.

Petersburg.—Incorporated: William N. Friend, Alfred Friend and James M. Tallaferro have incorporated as William N. Friend, with an authorized capital of \$5000.

Petersburg—Brewery Depot.—W. W. Robinson has contract at \$17,000 to erect brewery depot for the Robert Portner Brewing Co., previously reported; structure to be two stories, 100x60 feet, of brick and stone.

WEST VIRGINIA.

Chapmanville—Coal Mines and Coke Ovens.—Greenough Coal & Coke Co. has been incorporated by Edward Boreman, William P. Caldwell, F. E. Moore, G. R. Hanley and Fred B. Moore, all of Shamokin, Pa., to mine coal, etc.; capital \$50,000.

Guseman—Woolen Mill.—John Englehart, Jesse M. Englehart, Sanford H. Hartman and others have incorporated the Englehart Woolen Mill Co. to manufacture all kinds of woolen goods; capital stock is \$30,000.

Hinton—Bridge.—Hinton Toll Bridge Co. recently reported incorporated with \$50,000 capital to maintain and operate a toll bridge over New river, has completed organization with Wm. Plumley, Jr., president; O. O. Cooper, vice-president, and J. A. Fox, secretary and general manager. Bridge will be constructed 1233 feet long, piers 40 to 60 feet high, capacity 100 pounds. Plans have not been adopted.

Huntington—Pottery.—K. B. Cecil Pottery Co., Catlettsburg, Ky., reported last week as contemplating removing its pottery to Huntington, will erect building 140x60 feet, manufacturing white and black glass stoneware; capacity 900,000 gallons per annum. Company is capitalized at about \$25,000.

Huntington—Stove Works.—Perfect Gas Stove Co. has been organized with \$25,000 capital and D. B. Smith, president; Roy Reece, vice-president and secretary, and C. Dusenberry, treasurer. It has purchased plant of the Gate City Stove Co. at Catlettsburg, Ky., which will be removed to Huntington and used to manufacture the Wilson gas stove. Company will later purchase site and erect plant.

Keyser—Cannery.—Reports state that J. Foreword of Terra Alta, W. Va., and associates contemplate establishing cannery.

Sistersville—Incorporated: R. M. Clendenning Company, with an authorized capital of \$50,000 by R. M. Clendenning, M. L. Clendenning of Sistersville, John Barnes of St. Marys, W. Va., and J. H. Smith of Jacksontown, W. Va.

Wheeling—Coal-mining.—**Wheeling Centre Coal Co.** has been organized for the development of 3000 acres of land. George W. Crow of Uniontown, Pa., is president; W. F. Shaffer, vice-president, and A. L. Hooten, secretary-treasurer.

OKLAHOMA TERRITORY.

Apache—Oil, Gas and Development Company.—C. Hawthorne Boynton, M. C. Boynton, F. E. Royer and others have incorporated the Oil, Gas & Development Co., with \$1,000,000 capital.

Geary—Cotton Gin.—Geary Ginning Co. has been incorporated, with \$10,000 capital, by S. C. Cravens, George C. Boland and others.

Lawton—Gas Plant.—Baertich-Gibler Oil Co., recently reported incorporated with \$500,000 capital, contemplates establishing \$50,000 gas plant. T. W. Owens is engineer in charge.*

Oklahoma City—Register Company.—American Register Co. has been incorporated, with \$100,000 capital, by George A. Eacock, James Chenoweth, L. G. Russell, John Hicks and W. D. Lamar.

BURNED.

Atlanta, Ga.—Liddell & Johnson's sawmill; loss \$1000.

Baird, Texas.—Ham and Zene Foster's cotton gin; loss \$6000.

Berkeley Springs, W. Va.—West Virginia Sand Co.'s sand mill; loss \$25,000; principal office, Baltimore, Md.

Chalybeate Springs, N. C.—W. C. Douglas' turpentine plant; loss \$10,000.

Charlotte, N. C.—Durham Building, J. A. Durham, owner, loss \$60,000; Piedmont Clothing Co., loss \$5,000.

Clarksville, Texas.—Cumberland Presbyterian Church; loss \$6000.

Clearwater, Fla.—Phoenix Hotel.

Columbia, Tenn.—A. B. Rains' drug store; loss \$20,000.

Conileville, Va.—Noah Coffman's store building; loss \$12,000.

Crudup, Ala.—Lacey-Buek Iron Co.'s commissary store, loss \$15,000; office, Birmingham, Ala.

Danville, Va.—Danville Ice Co.'s plant; loss about \$75,000.

De Kalb, Miss.—Charles Rosenbaum's cotton gin.

Denver, O. T.—Denver Cotton Gin, owned by the Norman (O. T.) Cotton Oil Co.; loss \$4000.

Greenville, Miss.—Greenville Boiler and Machine Works; Valley Steam Laundry.

Havre de Grace, Md.—Barn on the farm of Mrs. Sarah Henriques; loss \$10,000.

High Point, N. C.—High Point Furniture Co.'s plant; loss \$30,000.

Jellico, Tenn.—Jellico Powder Co.'s works destroyed by explosion.

New Orleans, La.—Casino and bandstand at Athletic Park owned by the Crescent Realty & Investment Co.; loss \$10,000.

Parkersburg, W. Va.—Jackson Hotel; damaged \$5000.

St. Joseph, Mo.—Rock Island elevator, owned and operated by the South Park Elevator Co.; loss \$25,000.

St. Louis, Mo.—Christian Peper Tobacco Co.; loss \$90,000.

Temple, Texas.—Tirado & Goodwin's harness factory; loss \$12,200. Real Estate Building; loss \$5000.

Thomaston, Ga.—D. O. Trammell's cotton gin.

BUILDING NOTES.

* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Atlanta, Ga.—Hotel.—George W. Levi and Dabney Scoville have had plans prepared by Architect Norrman for the erection of six-story hotel to cost \$75,000 on site recently purchased at \$20,000 on Mitchell street by Dabney Scoville, proprietor Hotel Marion.

Atlanta, Ga.—Church.—The Baptists of North Atlanta contemplate erecting edifice. Address George M. Brown, 584 Peachtree street.

Atoka, I. T.—School Building.—City has had plans prepared by C. H. Page, Austin, Texas, for the erection of proposed two-story brick school building, 60x70 feet, to cost about \$10,000; equipped with steam heat, electric lights, etc. Bids for construction will be received until October 1.

Bay St. Louis, Miss.—Jail.—E. H. Hoffman, clerk, Hancock county, Mississippi, will receive bids until October 3 for remodeling

and enlarging county jail in accordance with plans and specifications on file in clerk's office. Certified check for \$500 must accompany each bid; usual rights reserved.

Bay St. Louis, Miss.—Dwelling.—Joseph R. Behrens of New Orleans, La., has purchased lot 89x390 feet on which to erect residence.

Boyce, La.—School Building.—City contemplates erecting high-school building. Address The Mayor.

Baldentown, Fla.—Hotel.—It is reported that Colonel Graham will erect a hotel.

Brunswick, Ga.—Hospital.—Bowen & Thomas have contract to complete City Hospital; cost \$10,000.

Cape Henry, Va.—Cottage.—E. V. Roe of Virginia Beach, Va., will erect cottage capable of accommodating about 50 guests. (A. E. Roe was erroneously reported in these columns last month as to erect hotel.)

Cedartown, Ga.—School Buildings.—Board of Trustees of the Benedict Memorial School has adopted plans by President George E. Benedict for school building of wood, 102x112 feet.

Charleston, W. Va.—Bank and Office Building.—Dr. L. Pritchard, president Charleston National Bank, has let contract to A. F. Withrow & Co. for the erection of proposed bank and office building; structure to be seven stories, 50%x116½ feet, of stone, concrete, terra-cotta and brick.

Charlotte, N. C.—Dwelling.—J. G. Baird has purchased site at \$3750 on which to erect residence.

Charlotte, N. C.—Store Buildings and Warehouse.—John M. Scott will erect two two-story store buildings, 35x135 feet, and warehouse 35x135 feet. C. A. Black has contract for excavation work and F. W. Ahrens for construction.

Charlotte, N. C.—Hotel Improvements.—Central Hotel will be remodeled at a cost of \$50,000.

Chattanooga, Tenn.—Stable.—W. D. and J. D. Raft have let contract to Foreman & Bearden for the erection of two-story brick and stone stable 50x243 feet.

Chattanooga, Tenn.—Business Building.—N. T. Downing, Atlanta, Ga., is preparing plans for the five-story building, 80x150 feet, reported last week to be erected by the Stone Fort Land Co.

Chattanooga, Tenn.—Store Building.—Kirby, Mitchell & Co. will erect store building.

Cheneyeville, La.—School Building.—City has voted in favor of special tax for the erection of school building. Address The Mayor.

Cloverport, Ky.—Lodge Building.—Breckenridge Lodge No. 133, F. & A. M., will erect two-story brick lodge building, and bids will be accepted at once.

Columbia, S. C.—School Building.—City has decided to erect \$30,000 school building. H. J. Hennes, J. T. Barron and T. H. Fisher compose the building committee.

Columbia, S. C.—College Building.—E. O. Watson, president Board of Trustees, Spartanburg, S. C., will open bids October 20 for the erection of administration, dormitory and other buildings for Columbia Female College, Columbia, S. C. Plans and specifications may be had on application or from A. W. Todd, architect, Charleston, S. C. Board of Trustees reserves usual rights.

Cordele, Ga.—Depot.—It is reported that the Seaboard Air Line Railway will erect brick freight depot to cost \$10,000. Address Walter Hale, fifth division superintendent, Savannah, Ga.

Covington, La.—Hotel.—Mulberry Grove Hotel Co. has been incorporated, with \$100,000 capital, for the erection of hotel on Bogue Falaya river. Thomas Sully, New Orleans, La., is preparing plans for the building.

Crisfield, Md.—Bank Building.—The Marine Bank, Dr. Atkinson, president, has commissioned F. E. & H. R. Davis, architects, 220 St. Paul street, Baltimore, Md., to prepare plans and specifications for bank building; structure to be one story high with basement, 30x60 feet; brick with stone trimmings, steel beams, sanitary plumbing, steam-heating system. Plans will be ready for estimates this week.

El Paso, Texas.—Theater.—Judge Barrow has had plans prepared for his proposed five-story theater building 100x120 feet, having a seating capacity of 1200.

Frederick, Md.—Club Building.—Frederick Lodge of Elks incorporated by Wilbur H. Duvall, Jacob Rosenstock, J. Roger McSherry and others to erect clubhouse.

Henderson, N. C.—School Building.—J. T. Alderman, superintendent Henderson Graded Schools, wants plans, specifications, etc., from architects for 10 or 12-room school building to cost \$20,000 to \$25,000.

Hopkinsville, Ky.—School Building.—City has not adopted plans as yet for school build-

ing previously reported to be erected; building to be of brick with slate roof, heated by steam and cost \$20,000; J. E. McPherson, secretary.

Kansas City, Mo.—Warehouse.—M. H. Hudson will erect five-story brick warehouse to cost \$40,000.

Kansas City, Mo.—Apartment-house.—C. T. Murray will erect three-story brick apartment-house, 97x51 feet, to cost \$30,000.

Kingsland, Texas.—School Building.—Town contemplates erecting \$5000 school building. Address Secretary School Board.

Little Rock, Ark.—Office Building.—F. M. Welch of Alexandria, La., previously reported to erect nine-story office building, is organizing \$100,000 company for erecting building, which will cost about \$300,000. It will be of steel construction, absolutely fireproof. George R. Mann is preparing plans.

Little Rock, Ark.—Business Building.—W. A. Plunkett, J. E. Skillern, W. B. Plunkett and J. T. Jarrell have incorporated the Markham Street Realty Co., with \$50,000 capital, to erect three-story brick building 125x140 feet, after plans by Architect Thompson.

Longbeach, Miss.—Church and Dwelling.—O. E. Thompson of Gulfport, Miss., has contract to erect proposed church and home for the Lazarus Fathers at a cost of \$35,000. Home building will be two stories, 50x200 feet, and the church 58x138 feet. Toledano & Wogan, New Orleans, La., prepared the plans. A large pier of creosoted material will be erected, with pavilion and bathhouses.

Louisville, Ky.—Hall and Theater.—James B. Camp contemplates organizing company to build hall and theater, and is conferring with Brinton B. Davis, architect, relative to plans.

Lynchburg, Va.—Church.—Lutheran congregation contemplates purchasing site on which to erect church. Rev. Mr. Perry is pastor.

Macon, Ga.—Park Building.—R. H. Smalling has contract for erection of building at Central City Park reported last week. Curran Ellis prepared the plans.

Martinsville, Va.—Buildings.—Rucker & Witten Tobacco Co. has secured permits for one-story brick building, 100x150 feet, with gravel roof; one-story shed, 100x115 feet, with gravel roof; one-story brick building, 100x115 feet, gravel roof; three-story brick building, 115x150 feet, with gravel roof.

Mayfield, Ky.—City Hall.—J. H. Hayes has contract at \$685 for the erection of proposed City Hall.

Memphis, Tenn.—Building.—Sealed bids will be received for the erection of brick building, and plans and specifications may be seen at office of F. O. Fuller, Howe Institute, corner Frazer and Wellington streets; usual rights reserved.

Meridian, Miss.—Warehouse.—J. D. Tanner has contract to erect the Chas. E. Beer warehouse after plans by Stanton & Son; structure to be one story, 60x100 feet, of brick with steel connecting bars.

Mexia, Texas.—School Building.—Jesse F. Denning has contract to erect school building previously reported.

Minden, La.—Courthouse.—M. T. Lewman & Co. of Demopolis, Ala., have contract to erect \$40,000 courthouse previously reported.

Montgomery, Ala.—Hotel.—Nicholas Ittner, Atlanta, Ga., has contract to erect proposed \$500,000 hotel for the Montgomery Hotel Co.; Clifford A. Lanier, secretary.

Ocracoke, N. C.—Life-saving Station.—Horace L. Piper, acting general superintendent United States Life-Saving Service, Treasury Department, Washington, D. C., will open bids September 30 for the construction of a life-saving station at Ocracoke. Specifications and drawings, forms of proposal, etc., can be obtained upon application to office, Washington, D. C., or to the superintendents of construction of life-saving stations, Atlantic and Lake coasts, 17 State street, New York city; to the superintendent of the Seventh Life-Saving District, Shawboro, N. C.

Paducah, Ky.—Market-house.—George Katterjohn has contract at \$20,000 for the erection of market-house previously reported.

Paducah, Ky.—School Building.—Board of Education contemplates erecting \$6000 school building at Mechanicsburg.

Pineville, La.—Buildings.—Board of Commissioners of the Louisiana Hospital for the Insane have let contract to E. T. Elam at \$47,785 for the erection of three three-story brick buildings.

Raleigh, N. C.—Bank Building.—Wake County Savings Bank has let contract to J. W. Coffey for the erection of bank building.

Rockville, Md.—Bank Building.—Further details have been obtained concerning building for the Montgomery County National

Bank to be erected after plans and specifications by Baldwin & Pennington, architects, 311 North Charles street, Baltimore, Md. structure to be one story high with basement, 60x46 feet; brick with granite base and Indiana limestone trimmings, concrete foundation, tin roofing, galvanized-iron cornice, marble wainscot, terrazzo floor, iron banking screen on marble base, sanitary plumbin., steam-heating system. Burnham & Wells, Builders' Exchange Building, 2 East Lexington street, Baltimore, Md.; Frank L. Hanvey, 213 12th street N. W., Washington, D. C.; James L. Parsons, 322 10th street S. E., Washington, D. C., and Richardson & Burgess, Colorado Building, Washington, D. C., have been selected to estimate on the construction; bids to be in October 4.

Sarasota, Fla.—Bank and Office Building.—Judge Chapline will erect three-story bank and office building.

Savannah, Ga.—Hospital.—Board of Trustees of the Georgia Infirmary contemplates building hospital.

Savannah, Ga.—Apartment-house.—T. J. Philpot has contract to erect proposed apartment-house for Mrs. Minnie A. Leopold after plans by Architect De Bruyn Kops.

South McAlester, I. T.—Business Building.—Great Western Coal & Coke Co. has purchased site on which to erect four-story building to be occupied by the New State Steel Co.

St. Augustine, Fla.—Hotel.—H. Muller has purchased site at \$3000 and let contract to S. C. Edminster for the erection of 40-room hotel.

St. Louis, Mo.—Hospital Improvements.—R. M. Milligan has prepared plans for the erection of additions to the Mullany Hospital.

Summit, Miss.—School Building.—City has engaged P. H. Weathers of Jackson, Miss., to prepare plans and specifications for proposed school building.

Sutton, W. Va.—Jail and Residence.—Elliott & Winchell have contract to erect jail and sheriff's residence, previously reported, to cost \$25,000; Holmoe & Lafferty prepared the plans.

Tampa, Fla.—Warehouse.—R. J. & B. F. Camp Lumber Co. will erect warehouse 500x30 feet.

Tampa, Fla.—Depot.—Blackburn & Wilhelm have contract to erect proposed depot for the Seaboard Air Line Railway.

Tampa, Fla.—Hospital and Sanitarium.—Kendrick & Levick have contract to erect hospital and sanitarium of the Centa Espanol, after plans by Alfred H. Parson; building to be 145 feet long, of sandstone and pressed brick with terra-cotta trimmings; cost \$65,000.

Tlaga, Texas.—School Building.—City has voted affirmatively the proposed bond issue for the erection of brick school building. Address The Mayor.

Tuscaloosa, Ala.—Jail Building.—City has adopted plans and specifications by Chamberlin & Co. of Birmingham, Ala., for jail building previously reported to be erected.

Washington, D. C.—Residence.—Wood, Dunn & Deming have prepared plans for three-story brick residence to be erected by Mrs. Frederick W. Huldeker.

Washington, D. C.—Office Building.—Dr. James F. Mitchell will erect office building. Wood, Dunn & Deming are preparing the plans.

Washington, D. C.—Dwellings.—Appleton P. Clark is preparing plans for Samuel E. Lewis' proposed \$20,000 residence. Henry M. Ward, U. S. N., has had plans prepared for residence on Kaolorama avenue.

Washington, D. C.—Flats Buildings.—Oesterman & Butler are erecting 10 flat buildings of pressed brick with brownstone trimmings at a cost of \$60,000.

Washington, D. C.—Store and Warehouse.—Westcott & Story have had plans prepared by Brown & Brown for the erection of three-story brick and stone store and warehouse 23x67 feet.

Washington, D. C.—Apartment-house.—Joseph D. Wright, Fendall Building, will erect four-story apartment-house 50x100 feet, after plans by Hunter & Bell.

Williamsburg, Va.—Church Improvements.—Congregation of Bruton Parish Church contemplates expending \$20,000 on improvements. W. A. B. Goodwin is pastor.

Wilmington, N. C.—Building.—Cyrus S. Van Amringe has purchased site on which to erect two-story building 30x60 feet, of white pressed brick and brownstone, with plate-glass windows.

Winona, W. Va.—Lodge Building.—Dr. Joseph C. Brown will open bids October 1 for the erection of a Masonic hall; plans and specifications on file at office of Dr. Brown, Winona.

RAILROAD CONSTRUCTION.**Railways.**

Atlanta, Ga.—Construction is reported begun on the extension of the Atlanta, Knoxville & Northern Railroad, which is to be built from Marietta to Atlanta, ground having been broken in the suburbs of Atlanta.

Baltimore, Md.—The Baltimore & Ohio Railroad Co. will, it is reported, spend about \$1,000,000 for improvements at Fairmont, W. Va. D. D. Carothers is chief engineer.

Barboursville, Ky.—It is reported that plans are under way for building a proposed railroad called the Jellico, Barboursville, Manchester & Bentleville Railroad, from Jellico to Beattyville, about 80 miles.

Bryan, Texas.—The Business League and others are considering a proposition to build an electric railway from Bryan to the Agricultural and Mechanical College. W. E. Saunders is president of the league, and F. Marlon Law, secretary.

Chattanooga, Tenn.—Mr. E. Watkins of Watkins & Thompson, attorneys-at-law, writes the Manufacturers' Record confirming the report that application has been made for a charter for the Florence & Clifton Railway Co. to build a line from Florence, Ala., to Clifton, Tenn. The charter was signed by Mr. Watkins and others of Chattanooga, but those interested are Eastern people.

Chicago, Ill.—The Atchison, Topeka & Santa Fe Railway is reported to be surveying for an extension from Tulsa, I. T., to Shawnee, O. T., about 80 miles. J. Dun is chief engineer at Chicago. Mr. H. U. Mudge, general manager, Topeka, Kan., is quoted as saying that all is ready to begin construction on the Owasso-Tulsa extension and that work will be pushed.

Chicago, Ill.—G. H. Kimball, chief engineer Chicago & Alton Railway Co., writes the Manufacturers' Record denying the report that the company will build second track between Mexico, Mo., and Kansas City.

Chicago, Ill.—It is reported that the work of double-tracking the line of the Illinois Central Railroad from Halls to Fowlkes, Tenn., is in progress. Louis Montville of Memphis having the contract. H. U. Wallace is chief engineer. J. T. Harahan, second vice-president Illinois Central Railroad, is reported as saying that the work of double-tracking between Memphis, Tenn., and Fulton, Ky., is being hurried, to be completed soon, which will give the company two or more tracks between Chicago and New Orleans. He denied the report that the company would probably acquire the Choctaw, Oklahoma & Gulf Railroad from the Rock Island system.

Columbus, Miss.—The directors of the Columbus, Memphis & Pensacola Railroad are reported as saying that a route has been decided upon from Columbus to Amory for their proposed new line.

Enid, O. T.—It is reported that the Oklahoma Construction Co. has secured the contract for constructing the northwest extension of the Denver, Enid & Gulf Railroad.

Fort Worth, Texas.—It is reported that contract has been awarded Charles Langtry for construction of the Santa Fe cut-off out of Belen; work will soon commence.

Fort Worth, Texas.—The Fort Worth Belt Railroad Co. has filed an amendment to its charter, it is reported, increasing its capital from \$100,000 to \$500,000, to finance the construction and operation of an extension.

Greenville, S. C.—It is reported that work will begin within 30 days on the Greenville & Knoxville Railway. W. H. Prince is general manager.

Greenville, Miss.—The Delta Southern Railroad has organized by electing as directors J. S. B. Thompson, M. Rickey, W. W. Stone, Joshua Skinner and R. S. McMullin. The officers elected are J. S. B. Thompson, president; E. B. Duncan, secretary, and H. C. Ausley, treasurer. The road to be built will be a branch of the Southern Railway connecting Elizabeth, Kuhns, Percy and Campbellsville.

Jefferson, Ga.—Information received by the Manufacturers' Record confirms the report that application has been made for a charter for the Jefferson & Athens Railway, to be 18 miles long, by H. W. Bell, W. H. Smith, R. L. Smith and others. The land is almost level and little grading will be required. There is, moreover, no watercourse between the two places. Subscriptions will be solicited and rights of way secured immediately after the granting of the charter, which is expected within 30 days.

Joplin, Mo.—Mr. D. W. Spooner, general manager and chief engineer, Arkansas, Missouri & Kansas Railroad, writes the Manufacturers' Record that grading has begun on

their line, most of the work being done under the supervision of the railroad company.

Kingsville, Tex.—Mr. H. W. Adams, traffic manager of the St. Louis, Brownsville & Mexico Railroad, is reported as saying that construction work is progressing rapidly on the Fordyce branch, there being only about seven miles of steel yet to be laid.

Knoxville, Tenn.—Mr. W. J. Oliver of the firm of W. J. Oliver & Co., which has the contract for the reconstruction of the Atlanta, Knoxville & Northern's line from Wetmore to Knoxville, 60 miles, is reported as saying 1000 men and 500 teams are in the field, and work will be pushed as rapidly as possible.

Long Leaf, La.—The Crowell & Spencer Lumber Co., Ltd., is soliciting bids for grading 11 miles of railroad.

Longview, Texas.—The Texas, Sabine Valley & Northwestern Railroad is reported to have closed financial arrangements to build the proposed Texas & Gulf Railroad to Sabine Pass. F. T. Rembert and others are interested.

Lookout Mountain, Tenn.—Mr. M. S. Gibson, manager of Lookout Inn, writes the Manufacturers' Record that the proposed electric railway is intended to be built from St. Elmo to the top of Lookout mountain. Up to this date no definite action has been taken. There will be a meeting of interested parties on October 10.

Marshall, Texas.—The Gulf, Texas & Northern Railway Co. has filed its charter in Texas to build a line from the Gulf of Mexico, near Sabine Pass, Texas, to Oklahoma City, O. T. The line in Texas will be about 50 miles long, and the principal office will be at Marshall. The route is through the following counties: Jefferson, Orange, Hardin, Newton, Tyler, Jasper, Angelina, Sabine, San Augustine, Shelby, Panola, Harrison, Marion, Upshur, Camp, Morris, Franklin, Titus, Hopkins, Delta, Red River and Lamar. The incorporators are H. L. Hull, Fort Worth; L. W. Lloyd, Jacob Wiseman, A. B. Blocker, M. Scully, W. L. Martin, W. C. Pierce, Jr., all of Marshall; S. J. Smart and R. W. Carravay of Logansport, La.

Meherrin, Va.—It is reported that about 10 miles of grading is complete on the Lunenburg Lumber Co.'s railroad, and tracklaying is to begin soon, the work to be pushed as rapidly as possible.

Memphis, Tenn.—The Clarksdale, Lyon & Friars Point Railway is projected to be built from Clarksdale, Miss., northward via Lyon to Friars Point, Miss., about 18 miles, the latter point being on the Mississippi river. Among those interested in Memphis are James F. Hunter, general manager of the Tennessee Trust Co.; John Bailey of the Day & Bailey Grocery Co., and Frank Trimball of Trimball & Corbett, real estate dealers.

Memphis, Tenn.—It is reported that the Union Railway Co. has completed construction work on its belt line around the city. Henry G. Fleming is president.

Mobile, Ala.—The Mobile, Jackson & Kansas City Railroad is reported to have laid track from the north as far as Louisville, Miss., and to a point one mile south of that town.

Nacogdoches, Texas.—M. C. Bay, general manager of the Nacogdoches Southeastern Railway, is quoted as saying that seven miles of the line are in operation from Nacogdoches, and it is being extended towards Oil City and San Augustine.

Parkersburg, W. Va.—It is reported that construction work will be resumed on the proposed Bellington & Northern Railroad (Wabash system) on the 1st of March next. This line is to run from Bellington, W. Va., north to the Pennsylvania State line, and will be continued thence to Pittsburgh under the name of the Fayette County Railway. S. D. Brady is chief engineer at Parkersburg.

Purcell, I. T.—The Canadian Valley & Western Railway Co. has been chartered in Oklahoma, with headquarters at Norman, to build a line 130 miles long, starting from a point near Washita Junction and going southeast through Washita and Caddo counties to Chickasha, I. T., thence to the headwaters of Walnut creek and along that stream and the South Canadian river to a connection with the Muskogee Union Railroad. The incorporators are T. C. Woods, W. G. Blanchard, T. F. Green, Dorset Carter, J. F. Sharp and D. R. Malone of Purcell, I. T.; W. H. Johnson, G. M. Rountree and M. L. Brittain of Norman.

Saluda, S. C.—A. B. Cargile is reported as saying that a movement is under way to build a railroad from Saluda to Johnston, about 15 miles.

Savannah, Ga.—The Southern Investment Co. of Savannah will, it is reported, immediately begin building two spurs of the

Florida West Shore Railway, one to Ellenton and the other to Fruitville, Fla.

Sistersville, W. Va.—It is reported that construction has begun on the electric railway from Sistersville to Friendly.

South McAlester, I. T.—P. W. Bean, promoter of the line; Joseph E. Gregg of Pittsburgh, Pa., and R. P. McGeehan of Kansas City are reported to be negotiating with the city to build the proposed Kansas City, Oklahoma & Houston Railway via South McAlester. Mr. Bean is quoted as saying that construction work is under way south of the Red river towards Honey Grove, Texas.

St. Louis, Mo.—The Missouri Pacific Railway is reported to have awarded a contract for 104 miles of line to Hammond & Jeffries. It will include seven tunnels and numerous heavy cuts and fills. H. Rohwer is chief engineer at St. Louis, and J. W. Way, same address, is consulting engineer.

St. Louis, Mo.—It is reported that the Missouri Pacific Railway will spend \$20,000 improving the Iron Mountain property at Newport, Ark., the improvements to consist of a new freight depot and about two miles of track. H. Rohwer is chief eng'eer.

St. Louis, Mo.—It is reported that unless the Plainview Southern Railway soon begins construction of the railroad from Amarillo to the Southern Plains country, ultimately to connect with the Texas & Pacific Railway, the Missouri Pacific system will take up the work. H. Rohwer is chief engineer of the Missouri Pacific.

St. Louis, Mo.—It is reported that contract for construction of the proposed extension of the Fort Worth & Rio Grande Railway (Frisco system) from Brady to San Antonio, Texas, will soon be let. B. F. Yoakum is president.

St. Louis, Mo.—The Jefferson City, Jerico & Southwestern Railroad Co. has been chartered to build a line from Minden to Eldon, Mo., about 125 miles. The incorporators are Julius R. Long of Little Rock, Ark.; W. R. Allison of Eldorado Springs, Ark.; E. R. Chapell, John B. Meyers and Robert E. Hollins of St. Louis.

St. Louis, Mo.—The Missouri Pacific Railway is reported to have completed the White river extension of the Iron Mountain as far as Yellville, Ark.

Sevierville, Tenn.—It is reported that J. C. Monday, accompanied by Civil Engineer Major T. T. Harwood, have been prospecting in Sevier county for a railroad from Knoxville to Sevierville. It is expected Eastern capitalists will be interested.

Tahlequah, I. T.—It is reported that preliminary surveys are being made in and around Nowata for the Oklahoma & Cherokee Central Railroad. Dr. Gammon is chief promoter. Horace Adams is said to be representing the company in securing rights of way. The line will connect Nowata and Chelsea, I. T., and Wichita, Kan., with an extension from Pryor Creek, I. T., to Fort Smith, Ark. It will also reach either Bartlesville or Dewey, I. T.

Tumlin, Ga.—The Vanderbilt Timber & Southwestern Railway is reported to have completed 13 miles of line as far as Hopewell, W. W. Summerlin is general manager.

Union, S. C.—The Union & Glenn Springs Railroad has been graded, it is reported, from Monarch Mills to Dr. A. E. Fan's at the Union end of the Neals Shoals line.

Wilmington, N. C.—The Atlantic Coast Line is reported to be making improvements to its depots and freight yards at Charleston, E. B. Pleasants is chief engineer.

Wilmington, N. C.—It is reported that rapid construction is being made at the Pinners Point terminals of the Atlantic Coast Line Railway.

Wise, Va.—Mr. D. R. Bishop, superintendent of the Wise Terminal Co., writes from Glamorgan, Va., to the Manufacturers' Record regarding the extension of the Virginia & Kentucky Railway, saying that "a preliminary survey has been made from Glamorgan through the Cumberland Mountains to the Elk horn drainage, but it is doubtful whether anything will be done this year or not."

Street Railways.

Atlanta, Ga.—The Atlanta & Northern Railway Co. has applied for permission to extend its line to connect with the Marietta street line of the Georgia Railway & Electric Co., the extension to be four miles long. P. S. Arkwright is president.

Birmingham, Ala.—The Birmingham Railway, Light & Power Co. will, it is reported, build an extension to Boyles, about five miles.

Chattanooga, Tenn.—It is reported that the Chattanooga Rapid Transit Co. will reconstruct and operate Incline No. 1 up Lookout mountain. H. M. Littell is manager.

Braidentown, Fla.—The Manatee Light & Traction Co., John A. Graham, president and general manager, with offices at Braidentown, will, it is reported, extend its line to Oneco, in Manatee county, and to the Gulf of Mexico, besides also laying temporary tracks the full length of the Cedar Hammock drainage canal to move earth, rock, etc.

Fort Worth, Texas.—It is reported that President Sam Rosen of the Fort Worth & Rosen Heights Street Railway Co. has applied for franchise for use of certain streets in Fort Worth.

Greenville, S. C.—It is reported that Engineer Whitner is completing arrangements for construction of the loop, three and a-half miles long, from the terminus of the Bumcombe-street line to Pendleton street, for the street railway. Mr. Whitner is quoted as saying that survey is complete and most of the right of way secured.

Greenwood, Miss.—Mr. Rowan Thayer, cashier of the Bank of De Flore, writes the Manufacturers' Record that surveys for the Greenwood Electric Railway will begin about October 4, and that work will commence immediately after the first section, eight miles, has been surveyed, maps prepared and right of way deeded.

Nashville, Tenn.—The question of granting the Nashville Railway & Light Co. franchise for construction of extensions is being considered. Work will begin as soon as the matter is settled.

New Decatur, Ala.—The North Alabama Traction Co. is reported to be building an electric line to South Highlands in the suburbs.

San Antonio, Texas.—It is reported that the San Antonio Traction Co. will rebuild its line. Surveys have been completed and material ordered.

West Point, Miss.—It is reported that capitalists have secured a franchise to construct an electric street railway in West Point, and are also considering a plan for building an interurban line from West Point to Starkville, Maben and Houston via Aberdeen, then back to West Point.

Wheeling, W. Va.—The Panhandle Traction Co. has applied to the city council for a franchise on Main street from the city limits at Jonathan's Ravine to 10th street.

MACHINERY, PROPOSALS AND SUPPLIES WANTED.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The Manufacturers' Record has received during the week the following particulars as to machinery that is wanted.

Artificial-stone Machinery.—See "Concrete-block Machinery."

Belting.—See "Flour-mill Equipment."

Bobbin and Shuttle Machinery.—Balentin Elcoro y Cia. S. en C. Apartado 161, City of Mexico, wants to correspond with manufacturers of machinery for making bobbins and shuttles for cotton mills.

Boiler.—See "Engine and Boiler" and "Flour-mill Equipment."

Boiler.—See "Engine and Boiler."

Boiler.—Sealed proposals will be received at the office of the Custodian, Hygienic Laboratory, Treasury Department, Washington, D. C., until October 3, for supplying and installing a steam boiler with fittings, trimmings and connections, in accordance with specifications, copies of which may be had upon application at the discretion of the custodian; M. J. Rosenau, passed assistant surgeon P. H. and M. H. S. Director (custodian).

Boiler.—Gen Stove Co., West Point, Miss., wants prices on 10-horse-power half-arch front horizontal boiler. (See "Engine and Boiler," also "Foundry Equipment.")

Boiler.—See "Engine and Boiler."

Boiler.—Piedmont Electric Co., Asheville, N. C., wants a new or second-hand boiler for steam-heating, large enough to furnish 500 to 600 feet radiation. State price delivered.

Boilers.—See "Engines and Boilers."

Boilers.—See "Engines and Boilers" and "Saw-mill Equipment."

Brick Machinery.—John W. Boardman, Jr.,

1107 Empire Building, Atlanta, Ga., wants to correspond with manufacturers of sand-lime brick machinery.

Bridge Construction.—Board of Commissioners of Roads and Revenues of Floyd county, W. M. Gammon, chairman, Rome, Ga., will open bids October 3 for constructing a wooden bridge over Big Cedar creek at Witzel Ford, in accordance with specifications. Usual rights reserved and contract to be let in accordance with laws made and provided.

Building Equipment and Supplies.—See "Slate Mantels."

Building Materials.—Savannah Lumber Co., Savannah, Ga., wants prices on building materials.

Carousel.—See "Merry-go-Rounds."

Concrete-block Machinery.—W. A. Wheeler, Bainbridge, Ga., wants to correspond with manufacturers of machinery for making building blocks.

Crane.—Semisteel Co., 701 New England Building, Cleveland, Ohio, wants prices, f. o. b. Chagrin Falls, Ohio, on jib crane, either wood or steel, capable of lifting five tons, for use in foundry; base to be 13 feet and boom 18 or 20 feet. Crane must have racking apparatus and be complete.

Dredging.—Sealed proposals for dredging about 65,000 cubic yards of material at navy-yard, Norfolk, Va., will be received until October 22 at Bureau of Yards and Docks, Navy Department, Washington, D. C.; Mordacal T. Endicott, chief of bureau. Plans and specifications can be seen at the bureaus or will be furnished by commandant of navy-yard, Norfolk, Va.

Electric Dynamo.—P. O. Box 191, Elkin, N. C., wants to buy a second-hand dynamo, 20 or 30 lights.

Electric Motor.—E. G. Robeson, 106 Rawson street, Atlanta, Ga., wants to purchase a second-hand 60-horse-power induction motor of standard make in good condition.

Electrical Equipment.—See "Saw-mill Equipment."

Elevator.—James Knox Taylor, supervising architect, Treasury Department, Washington, D. C., will open bids October 19 for installing a hydraulic freight lift in the United States custom-house building at St. Paul, Minn., in accordance with drawings and specifications, copies of which may be obtained on application at the discretion of the supervising architect.

Engine.—O. D. Murray & Co., Claremont, N. C., want a four-horse-power vertical engine.

Engine.—Joe T. Bland, Pittsboro, N. C., wants prices on an eight-horse-power gasoline engine.

Engine and Boiler.—George H. Brown, 108 Mariner street, Norfolk, Va., wants engine, boiler, etc. (See "Woodworking Machinery.")

Engine and Boiler.—Stratton-Clark Company, Ltd., wants one four-horse-power engine; may also want boiler. (See "Ice Machine.")

Engine and Boiler.—Gem Stove Co., West Point, Miss., wants prices on 20-horse-power horizontal engine and 40-horse-power half-arch front horizontal boiler. (See "Foundry Equipment.")

Engine and Boiler.—W. H. Wall, Wake Forest, N. C., is in the market for 25 or 30-horse-power engine and boiler, second-hand.

Engine and Boiler.—R. C. Mansfield & Son, Rosslyn, Ky., want engine and boiler. (See "Flour-mill Equipment.")

Engines.—G. R. Lynch Manufacturing Co., 120 West 8th street, Chattanooga, Tenn., wants prices and descriptive circulars of hot-air engines.

Engines and Boilers.—Columbia & George-town Steamship Co., Columbia, S. C., wants prices on engines and boilers. (See "Saw-mill Equipment.")

Excavation Work.—Middlesex Banking Co., Odd Fellows' Building, Memphis, Tenn., wants bids on 3000 or more cubic yards of ditch excavation on Linden plantation in Washington county, Mississippi. Profiles and specifications may be seen at office.

Fences.—See "Iron Works."

Fire-escapes.—Minglejorf & Co., Savannah, Ga., want addresses of manufacturers and dealers in fire-escapes near Savannah.

Flooring Machinery.—See "Woodworking Machinery."

Flour-mill Equipment.—R. C. Mansfield & Son, Rosslyn, Ky., want boiler, engine, rolls, sifters, shafting, belting, cleaning machines, etc.

Foundry.—See "Scale Manufacturers."

Foundry Equipment.—Eastwood & Mankin,

Sherman, Texas, want prices on lathes, drill press, planers, shapers, milling machine, twist drill grinder and drills, shafting, pulleys, etc.

Foundry Equipment.—Gem Stove Co., West Point, Miss., wants catalogues and prices on complete equipment for stove foundry, mountings, fittings, cupola, etc.

Foundry Equipment.—O. D. Murray & Co., wants a cupola. (See "Machine Tools.")

Foundry Equipment.—Gem Stove Co., West Point, Miss., wants prices on complete foundry equipment, including 40-horse-power half-arch front horizontal boiler, 20-horse-power horizontal engine, 32-inch cupola (after lining), blower and engine capable of melting six tons per hour, 28-inch drill press, nickel-steel outfit for stove work, emery stands, buffing and emery wheels, shafting, pulleys, hangers, rattlers, stove fittings, etc.

Gasoline Engine.—See "Engine."

Gas-works Equipment.—W. S. Baertich, Baertich-Gibler Oil Co., Lawton, O. T., wants to correspond with manufacturers of machinery and equipment for gas plant. (See "Oil-well Equipment.")

Hardware Supplies.—Ludwig Moll, Dusseldorf, via Cherbourg, Germany, wants addresses of manufacturers of swivel hooks, snaps, etc., in Japan and X. C. finish for saddle and harness purposes.

Heating Apparatus.—Maryland Elevator & Machine Co., 148-156 West West street, Baltimore, Md., wants estimates on installing steam-heating apparatus in its plant.

Heating Plant.—Sealed proposals in triplicate, marked "Proposals for Heating," will be received until October 8 by C. P. Townley, Q. M., Fort Monroe, Va., until October 8 for installing steam-heating plant in administration building. Information furnished on application. United States reserves usual rights.

Heating Plant.—See "Boiler."

Hot-air Engine.—See "Engines."

Ice Machine.—Stratton-Clark Company, Ltd., Whitecastile, La., may probably want ice machine. (See "Engine and Boiler.")

Iron Work.—J. L. Borden, chairman Cemetery Committee, Goldsboro, N. C., is in the market for about 500 running feet of ornamental iron fence for cemetery, and would like to correspond with manufacturers.

Iron Works.—See "Scale Manufacturers."

Kaolin Manufacturers.—W. C. Myers, Rosedale, Miss., wants addresses of manufacturers who use kaolin or other clays for manufacturing fancy tiles for mantels.

Laundry Equipment.—Valley Steam Laundry, Greenville, Miss., wants complete equipment for steam laundry, engine and boiler excepted.

Lumber.—Ingersoll Lumber Co., Ingersoll, O. T., wants prices on lumber.

Machine Tools.—See "Foundry Equipment."

Machine Tools.—See "Foundry Equipment."

Machine Tools.—O. D. Murray & Co., Claremont, N. C., want lathes, steam-fitting tools, etc. (See "Foundry Equipment.")

Merry-go-Rounds.—J. V. Dodenhoff, Lumberton, N. C., wants addresses of manufacturers of merry-go-rounds.

Mining Equipment.—Albert J. Salter, Philadelphia, Miss., wants complete equipment for operating coal mine on small scale.

Nut-shellers.—J. M. Connable, care Randolph Building, Memphis, Tenn., wants address of manufacturers of a machine for shelling pecans and other nuts.

Oil-well Equipment.—W. S. Baertich, Baertich-Gibler Oil Co., Lawton, O. T., wants to correspond with manufacturers of apparatus for pumping, piping and distributing oil. (See "Gas-works Equipment.")

Pearl-button Machinery.—H. A. Oelze (Cloverport Pearl Button Factory), Cloverport, Ky., is in the market for machinery for making pearl buttons.

Piping.—Pelican Ice Co., Ltd., Charles H. Behre, president, 1550 St. Louis street, New Orleans, La., is in the market for 30,000 feet one-and-one-quarter-inch, 400 feet five-inch and 1400 feet of three-inch black iron pipe. State prices delivered at New Orleans.

Piping.—See "Water-works Equipment."

Planing Mill.—See "Saw-mill Equipment."

Potteries.—See "Kaolin Manufacturers."

Printing Press.—John K. White, Gravel Hill, Va., will shortly be in the market for a press for publishing county newspaper.

Pulleys.—See "Foundry Equipment."

Railway Equipment.—White Stone Lithia Water Co., White Stone Springs, S. C., wants to buy six miles of 50 or 56-pound second-hand rails.

Railway Equipment.—Greenwood Electric Railway, Rowan Thayer, secretary and treas-

urer, wants information in regard to gasoline motor cars for use on interurban line.

Road Machinery.—Summers Buggy Co., Barnesville, Ga., wants addresses of manufacturers who make a specialty of building grading or road machines.

Sand-line Brick.—See "Brick Machinery."

Saw-mill Equipment.—Acock Bros. Lumber Co., Moultrie, Ga., wants prices on complete equipment for saw and planing mill with daily capacity of 100,000 feet, including boilers, engines, electrical equipment, log carts and wagons.

Scale Manufacturers.—Automatic Scale Co., Ltd., Minden, La., wants prices and information from manufacturers of special machinery relative to building an automatic weighing machine on contract.

Shafting.—See "Foundry Equipment."

Shafting.—See "Flour-mill Equipment."

Shafting.—See "Foundry Equipment."

Shellers.—See "Nut-shellers."

Slate Mantels.—A. E. Huddleston, White Sulphur Springs, W. Va., wants addresses of manufacturers of slate mantels.

Snaps, Swivel Hooks, etc.—See "Hardware Supplies."

Stone Works.—See "Foundry Equipment."

Street Paving.—Board of Public Works, Paducah, Ky., will open bids October 3 for paving Broadway, from 5th to 9th streets, with brick or bituminous material, also building a concrete curb and gutter on both sides of street, together with an eight-foot concrete sidewalk; plans, profiles and specifications on file in office of board, also in office of L. A. Washington, engineer, who can be addressed for further information. Usual rights reserved.

Tiling.—J. A. Russey, 128 Woodbine street, Hot Springs, Ark., wants prices on tile floors for bathrooms.

Tiling.—See "Kaolin Manufacturers."

Water-works Equipment.—R. S. Williams, city treasurer, Montgomery, Ala., will open bids October 3 for furnishing and delivering between 30 and 40 miles of pipe varying in size from four-inch to 14-inch internal diameter, with special castings to correspond, all in accordance with specifications on file in the office of City Engineer. Certified check for \$100 must accompany each bid. City reserves usual rights.

Woodworking Machinery.—George H. Brown, 108 Mariner street, Norfolk, Va., wants 80-inch veneer machine. (See "Engines and Boiler.")

Woodworking Machinery.—Frank Wright, Cave Springs, Ga., wants to buy a good second-hand double-panel raiser.

Woodworking Machinery.—Lenoir Woodworking Co., Lenoir, N. C., wants information as to best machines for manufacturing hardwood floors in short sections or parquetry flooring.

Woodworking Machinery.—See "Bobbin and Shuttle Machinery."

Woodworking Machinery.—R. D. Cole, Jr., superintendent R. D. Cole Manufacturing Co., Newnan, Ga., is in the market for complete line new up-to-date machinery for making sash, doors and blinds. Send cuts and prices.

MEXICO.

Bank Building.—The Banco Minero of Juarez, Mexico, has awarded contract to Rattenbury & Davis of El Paso, Texas, for the erection of a modern banking structure; steel frame, stone front, steam heating, etc.

Bull Ring.—Messrs. Aguilar and Cardeñas of the City of Mexico will build a bull ring, to be constructed of stone and structural iron.

Copper Mines.—Matt Dahlgreen and Chas. Wilhelmi of Velardena, Durango, have begun the development of copper veins and are preparing to continue mining on an extensive scale with modern equipment.

Department-store Building.—J. T. Carnahan and associates of Chicago, Ill., are seeking site in the City of Mexico for the erection of a modern department store five stories high.

Electric-power Plant.—Ugarte and Garcia Fuentes of Colima, Col., have placed contracts for equipment of machinery for their water-power electric plant. Plans and specifications for the installation and entire development are about ready.

Gold and Silver Mines.—Adolph Trauwitz of Chalchihuites, Zacatecas, has filed claims to mining lands which he will develop for gold and silver.

Gold and Silver Mines, etc.—Francisco R. Garcia, Daniel Ochoa and Nabor Gutierrez of Guadalajara, Jalisco, will develop gold, silver, copper and lead mining claims.

Plantations.—The Amate Plantation Co.

has been incorporated, with capital stock of \$450,000, to purchase land and conduct plantations in Mexico; incorporators, S. M. Kenward, D. N. Burruss, P. B. Jackson and others of Chicago, Ill.

Sandal Factory.—The Clá. Manufacturera de Calzado Corrientes Patentado, S. A., temporary offices at Palma No. 3, in the quarters of the Mexican Brokerage & Investment Co., City of Mexico, has been organized to build a plant for manufacturing sandals (ventilated cloth upper and leather sole). José G. Lugo is general manager.

Saw-mill.—R. W. Klock and J. G. Klock of Chicago, Ill.; R. E. Huffman of Evanston, Ill.; H. J. Pearce and G. Klock of Chicago will build a saw-mill in Mexico.

Stamp Mill.—The San Blas Mining Co. of Caborce, Sonora, is preparing to build a large stamp mill.

Silver and Lead Mines.—Vincent Vasquez of Guadalajara, Jalisco, has filed claims to lead and silver deposits which he proposes developing.

Silver and Copper Mines.—Enrique C. Vilasenor of Ameca, Jalisco, has filed claims to virgin copper and silver veins which he proposes developing.

Sugar Mill.—The Tabasco Plantation Co. contemplates building a sugar mill, distillery, tramways, etc., to take care of the product of 5000 acres of sugar-cane; about \$1,500,000 to be expended. This company's main offices are in Minneapolis, Minn., S. H. Brown of that city being president.

Timber Lands.—The American-Mexican Lumber Co. has been organized to purchase and develop 500,000 acres of timber land near Chihuahua, Chl. Benjamin B. Cheney of Boston, Mass.; Rutherford Trowbridge of New Haven, Conn., and Harry B. Robinson of Youngstown, Ohio, are interested.

Railways.

Electric Railway.—M. D. Watson and J. I. Bickerdike of Chicago will, it is reported, apply for a concession to build an electric railway from the Rosa Amarilla copper mines, in the State of Jalisco, to Navidad, on the Pacific Coast.

Electric Railway.—Surveys are reported to be completed on the proposed electric railway from Guadalajara to Chapala, and construction work is expected to begin in the near future. New York capitalists are back of the enterprise.

Electric Railway.—It is reported that Messrs. Alejandro Collier and Carlos Blanco have completed surveys for the Atzcapotzalco and Spanish Cemetery electric-car lines. W. W. Wheatley is general manager of the Mexican Electric Tramways Co. The company will also change the Banos line from mule to electric traction.

Steam Railroad.—The North American & Mexican Development Co. has been incorporated, with \$25,000 capital, to build a railroad from Oaxaca to some point on the Tehuantepec Railway, 250 miles. W. W. Nelson and T. A. Witten of Kansas City, Mo., and Henry L. Cholstoy of Guadalajara are interested.

Steam Railroad.—Julius Rogers is reported to be making arrangements for right of way for a railroad to be built from Tepic, capital of the State of Nayarit, to San Blas, and it is expected that work will begin on the line within six months. English, American and French capitalists are interested.

Steam Railroad.—It is reported that the American-Mexican Lumber Co., organized at Boston, Mass., has purchased about 500,000 acres of timber land northwest of Chihuahua City and proposes constructing a railway 75 miles long from the timber tract to Casas Grandes station, on the Rio Grande, Sierra Madres & Pacific Railway. Benjamin B. Cheney of Boston, Mass.; Rutherford Trowbridge of New Haven, Conn., and Harry B. Robinson of Youngstown, Ohio, compose the syndicate.

Drop-Forged Follower Plate.

The Allegheny Forging Co. has introduced a design of drop-forged one-piece follower plate for spring-draft gears. It is lighter than the riveted thimble plates usually used and save the expense to the railroads of drilling the riveted hole, countersinking and riveting the thimble to the plate. Among the various other products of the Allegheny works is chain, rivets and burrs, plate and cast washers, hot-pressed and cold-punched nuts, etc. Timely leaflets regarding these specialties are now being issued and distributed among the trade and those interested. Illustrations are presented and tables and figures are given to enable one to fully comprehend just what Allegheny Forging Co. output consists of. The plant is at Allegheny, Pa., and the offices are in the Frick Building, Pittsburgh.

INDUSTRIAL NEWS OF INTEREST

To Protect Telephone Wires.

W. L. G. Appleby of Germantown, Md., has patented a device for preventing telephone wires from becoming twisted in high winds.

Electric-Light Plant Contracts.

The Electric Supply Co. of Savannah, Ga., is at present fulfilling some important contracts for electric-light plants. It is installing a plant at Careyville, Fla.; also at Savannah for the Savannah Lumber Co., to light that company's large planing mill.

The American Cement Co.

Buyers of cement from the American Cement Co., as well as others who have occasion to correspond with the company, are asked to note that the offices in Philadelphia have been removed to Rooms 604-610 Pennsylvania Building, 15th and Chestnut streets.

Wants to Invest \$10,000.

A capable man possessed of some capital wants to invest from \$5000 to \$10,000 in a successful enterprise where there is an opportunity to become interested. Those who may have opportunities to offer in this regard are instructed to address D. care of the Manufacturers' Record, and their letters will be forwarded.

North Carolina Timber Lands.

In Western North Carolina there is a tract of 20,000 acres of timber land and band-saw mill, with five miles of standard-gauge logging railway and appliances, for sale. The plant is all ready for operation. J. B. Hart of Clarksburg, W. Va., can be addressed for price and terms. He states that no options will be given.

Death of J. B. Ramp.

The Murray Iron Works Co. of Burlington, Iowa, lost a valuable and valued employee in the death of J. B. Ramp. For nearly 25 years Mr. Ramp has been foreman and superintendent of the company's foundry, and was held in high esteem by his employers and fellow-employees. He was 74 years old at the time of his death, several weeks ago.

Cotton-Mill Sale.

The well-known auctioneers, Messrs. J. E. Conant & Co. of Lowell, Mass., announce that they will offer for sale the Cumberland Mills Co.'s property on October 4. This plant comprises modern mill buildings, textile machinery, steam-power equipment, etc., being a complete manufacturing establishment that will be sold to the highest bidder. It is located at Cumberland Mills Station, R. I. Catalogues giving full details can be obtained by addressing Conant & Co.

New Jersey Factory for Sale.

Any manufacturers seeking factory buildings and steam plant will find it advisable to correspond with Messrs. Nicholson & Co., 150 Broadway, New York. The firm offers for sale new three-story brick building 60x260 feet, with ell 60 feet square, giving 57,000 square feet of space; 30-horse-power steam plant is also attached. The plant is in direct rail connection with the Pennsylvania system. Other factory properties can also be learned of by addressing the firm.

Bartlett & Snow Contracts.

That well-known manufacturer of mill and labor-saving machinery, the C. O. Bartlett & Snow Co. of Cleveland, Ohio, has received the following important orders: From Levi Cohn Bros., Lancaster, Pa., for a 72-inch Triumph steam drier; from Ohio Retarder Co., Port Clinton, Ohio, 72-inch Triumph steam drier; from Sheet Bros. Elevator Co., Cleveland, Ohio, complete elevator machinery outfit for plant recently destroyed by fire, and from Good Roads Machinery Co., Uniontown, Pa., an elevating outfit.

Big Safe in Big Hotel.

A masterpiece of safe work, both in size and beauty of construction, is now being completed in the main offices of the Bellevue-Stratford Hotel, Philadelphia, a hotel costing some \$8,000,000. The safe is on a style of elegance commensurate with the general appointments of the immense caravansary in which it is located, and the securing of the contract for placing it is an indication of the high reputation which the York Safe & Lock Co. of York, Pa., enjoys. That company obtained the contract, and is now at work on the big safe.

Elevator Works Wants Representative in Birmingham and Atlanta.

One of the progressive elevator builders of Baltimore is the Faunt Le Roy Company, which is steadily booking many important contracts in the city named, as well as in

other sections and in the South. The company wants to be represented in Atlanta, Ga., and Birmingham, Ala., and is now prepared to correspond with applicants who may desire to make the necessary arrangements. It is the purpose to secure the services of a man who is versed in mechanical equipment, especially one familiar with elevator installation.

Important Engine Contracts Awarded.

Important contracts for engines have been awarded to the Brown Corliss Engine Co. of Corliss, Wis. They call for four large vertical cross-compound Corliss engines, to be direct-connected to generators, for the Washington navy-yards. Before placing the order the government inspectors investigated thoroughly and inspected the Brown engines and the company's facilities for building engines. The Brown Corliss Engine Co. has also secured an order from the United States Steel Corporation for a 21x14x48-inch tandem compound rolling-mill engine to be installed in the McKeesport (Pa.) plant.

Sale of Textile-Mill Property.

In lots to suit purchasers, the entire machinery equipment of the four mills of the Blackstone Manufacturing Co., at Blackstone, Mass., will be sold at public auction on October 6. This property comprises textile machinery, 600-horse-power steam plant, four stone buildings (to be removed, as is also the mechanical equipment). Investors or manufacturers likely to be interested in bidding on the properties in whole or part are instructed to address Messrs. J. E. Conant & Co. of Lowell, Mass., for full particulars. Conant & Co. are the auctioneers in charge. They will send detailed catalogues to inquirers.

Contracts for Road Machinery.

Road improvement is one of the subjects that is probably receiving more attention in the South at the present time than in any other section of the United States. Municipalities, counties and private companies are building hundreds of miles of improved highways in the South. Some recent contracts in this connection are of interest. They include the order of the commissioners of Clark county, Georgia, for rock-crushing and road-building machinery, and the order of the officers of Glade Springs, Va., for a crusher and roller. These contracts were given to the Acme Road Machinery Co. of Frankfort, N. Y., a leading specialist in road-building machinery and contractors' supplies.

Harry Bros. Co. in Dallas and New Orleans.

In referring last week to that important enterprise, the Harry Bros. Co., there appeared an error to which attention is directed. The Harry Bros. Co. is one of the best-known manufacturers of corrugated galvanized-steel tanks and cisterns, etc. It has not removed its Dallas (Texas) plant to New Orleans, but has removed its Beaumont (Texas) plant to New Orleans, believing the latter city offers a better field, and already the prospects are so encouraging that it is contemplated to enlarge the plant. The company's Dallas plant has been continued, having recently been enlarged, and is now conducting a larger business than ever before.

The Winget Concrete Machines.

With the introduction of concrete blocks for general building and construction purposes there have been a number of concrete-block-making machines devised and put on the market. Many plants have been established for making concrete blocks, and many brick works have added equipment for that purpose. It is worth while noting that one of the most successful concrete-block machines is the Winget, made by the Winget Concrete Machine Co. of Columbus, Ohio. This company's machine for the production of hollow concrete building stones has been installed in a number of plants, where its use has afforded the greatest of satisfaction. Its recent installations include the C. P. Byrd Co., 28 South Liberty street, Baltimore; Charles M. Heath, Trenton, N. J., and many others. Mr. Heath has a complete plant.

Automatic Closing Sashes.

Sliding sashes are over and under weighted, and balanced by supporting the pulleys on saddles. Each saddle is held up by a chain tightened with a rod. The rods extend through the head and are separated by tightening nuts under which are fusible links. At 165 degrees the link melts from under the nut, releasing chains, and the sashes close by gravity. The sashes slide freely and close perfectly tight. A slanting pocket at head of window and the slanting offset in the sill

serve, wedge-like, to tighten the entire window. While the automatic closing attachment increases the cost of the window, its advantages are well worth the additional expenditure. The foregoing facts are from a card issued anent the Lupton Window (fire-proof hollow metal) made by the David Lupton's Sons Co., Allegheny avenue and Tulip street, Philadelphia.

Roll Grinding and Corrugating.

Messrs. Sprout, Waldron & Co. of Munsey, Pa., have had in operation since July 1 a complete corrugating outfit in a building for that purpose in connection with their regular milling-machinery business. Since this installation it has been running night and day, and rolls have been sent in from all parts of the country. The plant was put in under the personal supervision of James Dawson of the Rochester Roll Grinding & Corrugating Co., and the machines they put in were the very best that money could buy. They have a special device for truing the rolls, whereby they can guarantee that the rolls will not vary one one-thousandth part of an inch. This is an important feature to the miller who wishes his rolls to be accurate and uniform in size. Anyone having rolls to be reground or recut is requested to send Sprout, Waldron & Co. a sample pair, as they guarantee that the work will be so well done that the sender will be a permanent customer.

Praising American Machine Co. Elevators.

In the South one of the most prominent builders of elevators is the American Machine Co. of Louisville, Ky., and its electric, hydraulic, belt and hand-power machines for passenger and freight service have been ordered for many buildings, not only in its own section, but in other parts of the country. As indicating the results obtained with American Machine Co. elevators, the following quotations from recent letters are of interest. The Ahrens & Ott Manufacturing Co. of Louisville, Ky., one of the largest plumbers' supplies works extant, says: "We have now had in use one of your direct-connected electric elevator machines long enough to say that it has been given a thorough test. We find this installation entirely satisfactory and all that you claim for it. The means you employ to start and stop especially appeal to us in the economical use of current. We have in our New Orleans house two of your belt-driven elevators. They have been in use nearly a year now and have given the most satisfactory results. We take pleasure in recommending your machines in the highest terms." The J. J. Douglas Company of Louisville, one of the largest handlers of whiskies, says: "The electric elevator which you recently put in our building, and which we have been using for the past two months, has given entire satisfaction." It may be well to add that the American Machine Co. established an office in Baltimore, at 20 Clay street, last February, and has obtained many good contracts for elevators to be placed in modern buildings, replacing those destroyed in the big fire.

Roundhouse Heating.

Those interested in the construction of railway shops will find an article in the April issue of the American Engineer and Railway Journal by R. H. Soule particularly interesting in regard to roundhouses. Referring to the question of heating he says: "Heating by hot air from the fan is most unsatisfactory, especially if the dampers are so arranged that a large volume of hot air can be delivered under an engine in one pit and quickly blow it out." This system of heating roundhouses is to be found throughout the country, and especially in all the large roundhouses. By means of the fan, which is driven by a direct-connected steam engine, fresh air is drawn over the coils of steam pipes enclosed in a fireproof jacket and distributed through systems of distributing pipes, one overhead and another underground, the latter discharging the air under the engine and car-trucks for the purpose of removing the ice and snow from the engines and cars as they enter the roundhouse in the winter season. Thus the building is positively and economically heated and ventilated and the ice and snow is removed from the engine and car-trucks in a minimum time, regardless of the weather. Among the recent installations of the fan-heating system in roundhouses by the B. F. Sturtevant Company of Boston, Mass., are those at the Wabash Railway Co.'s roundhouse at St. Louis, Mo., and Montpelier, Ohio; the Pennsylvania Railway Co.'s roundhouse at Philadelphia, Pa.; the Illinois Central Railway Co., Chicago, Ill.; the C. M. & St. Paul Railway Co., Galewood, Ill., and nine roundhouses of the Canadian Pacific Railway Co. at North Bend, B. C.; Regina, Assa.; Sault Ste. Marie, Ont.; Cartier,

Ont.; Webbwood, Ont.; Chalk River, Ont.; McAdams Junction, N. B.; Outremont, P. Q., and Toronto Junction, Ont.

Concerning Slag Roofing.

The large amount of work now in hand in the South by the Warren-Ehret Company of Philadelphia through its branch office at Baltimore indicates not only the popularity of slag roofing, the company's specialty, but also a very prosperous condition in the South. One large contract which the Warren-Ehret Company is at work on comprises a number of tobacco warehouses in Virginia and North Carolina. In Richmond are two buildings comprising 13 sections, each section 100x100 feet square. These buildings contain 130,000 square feet of roofing. At Durham, N. C., a seven-section warehouse having 70,000 square feet of roofing is being finished for the Bull-Durham Tobacco Co., and the Duke of Durham branch of the American Tobacco Co. has a 13-section warehouse with 130,000 square feet of roofing. At Danville, Va., there is a four-section warehouse with 40,000 square feet of roofing, at Wilson, N. C., a three-section warehouse with 30,000 square feet of roofing, at Greenville, N. C., a large warehouse with 20,000 square feet of roofing, and at South Boston, Va., one four-section warehouse with 40,000 square feet of roofing; these buildings belong to the American Tobacco Co. The erection of these one-story warehouses indicates, by the way, a new departure in warehouse construction. Instead of having four, five or six-story warehouses, as heretofore, the practice now is to exclusively confine the construction to one story, which reduces the fire risk and is more convenient. The warehouses are to provide additional space for increased business. The Warren-Ehret Company is also finishing warehouses at Lynchburg, Va., for Parker-Jennings Hardware Co., Craddock-Terry Shoe Co., Oglesby-DeWitt Company and Guggenheim & Co., which represents a total roofing contract of 40,000 square feet. Other Warren-Ehret contracts are for roofing the platform sheds of the new C. & O. railway station at Charlottesville, requiring 15,000 square feet of roofing. At Richmond the Virginia State Insurance Co.'s office building is being provided with 5000 square feet of Warren-Ehret slag roofing, and a large warehouse belonging to the Ellison estate at Richmond is taking 9000 square feet. The Warren-Ehret Baltimore branch, John O. White, manager, has been established five years. Its territory includes Maryland, Virginia, West Virginia, District of Columbia and North and South Carolina. When this branch opened there was not a slag roof of any importance in Baltimore, and although it had been adopted for the Continental Trust, Alexander Brown & Co., International Trust, Equitable, Calvert, Central Savings Bank and Herald buildings and others, yet up to the time of the big fire a charge of five cents on \$100 was made in comparison with metal or slate roofs. So excellent a showing did slag roofing make in the Baltimore conflagration that this difference in rate has been removed by the underwriters. Architects now readily specify slag roofing, and owners are being won over to the merits of this material. In every case in the burned district where slag roofing was used before the fire it is claimed it is being put back, and nearly all the new warehouses in the fire district are to have that roofing. In Washington such buildings as the Willard and Raleigh Hotels, the Evening Star office building, Stoneleigh Court, Secretary Hay's elegant new apartment-house and numerous other apartment-houses and warehouses are covered with the Warren-Ehret Slag Roofing. The platform and station sheds of the Baltimore & Ohio, Pennsylvania and many other railways are roofed with slag roofing.

TRADE LITERATURE.

Rubberoid Roofing.

The Standard Paint Co., 109 William street, New York, has issued a booklet about Rubberoid Roofing, presenting valuable hints to the roofer for applying the standard roofing of the world.

The "Omega" Toggle.

An illustrated booklet telling all about the "Omega" toggle has been issued by its manufacturer, the New Jersey Foundry & Machine Co. of 9, 11, 13 and 15 Murray street, New York. It gives full details regarding this valuable device for fastening lamp brackets, rosettes, insulators, telephones, etc.

"A B C" Fans and Blowers.

Buyers of the celebrated "A B C" Fans and Blowers and others who are interested in such apparatus will find concise data concerning the "A B C" make in a booklet now being issued. This publication just fits the vestpocket, and contains brief data and price-

lists of the fans and blowers referred to, the product of the American Blower Co. of Detroit, Mich.

The "Bond" Hanger.

Manufacturers and other users of power who include pulleys and hangers in their establishments will find data of interest to them in the leaflet issued by Charles Bond of 520 Arch street, Philadelphia. Mr. Bond details the design and construction of the "Bond" patent ring-rolling, adjustable ball-and-socket hanger, and points out the advantages arising from the use of the device. He is the manufacturer, and is prepared to correspond with present and prospective buyers of hangers who want to obtain the best possible results in using such an article.

Industrial Applications of Motors.

Sprague Bulletin No. 218 tells about industrial application of Sprague electric motors for direct-current circuits. The various applications shown indicate the unlimited uses to which these motors may be applied. Their adaptability is practically universal where direct current is used, and the many years during which they have been in successful service demonstrate the reliability and perfection of their design and construction. They are built by the Sprague Electric Co., 527 West 34th street, New York, where requests for copy of the bulletin can be sent.

The Kelsey Warm-Air Generator.

A book has been issued for the purpose of telling all about the Kelsey Warm-Air Generator and the very best possible method of heating homes, churches, schools and public buildings. The Kelsey is a hot-water boiler converted into a warm-air generator, and its separate currents of warm air are positively controlled and sent into any direction. Its economy, efficiency and durability are being demonstrated every day by equipments in position, there being 24,000 Kelsey generators in use. The Kelsey Heating Co. of 337 West Fayette street, Syracuse, N. Y., makes the Kelsey Warm-Air Generator. Ask for Book No. 5.

The Semisteel Calendar for Pocket.

An attractive vestpocket calendar of the current year has been issued by the Semisteel Company of Cleveland, Ohio. It is printed on a small sheet of semisteel, containing on one side the 1904 calendar and on the other the company's business card. The latter shows that the company manufactures light and heavy machinery castings of every description, sand-lime brick presses, brick cars, architectural and blast-furnace castings, pattern and machine work, etc. F. B. Squire is president; George W. Balkwill, vice-president and manager, and Howard E. Cole, secretary and treasurer; offices at 701 New England Building.

Coal-Handling Machinery.

Illustrated pamphlet No. 047 has been issued to call attention at this time to the coal-handling machinery manufactured by the C. W. Hunt Co. of West New Brighton, N. Y.; offices at 45 Broadway, New York city. For years this company has been known for its especial success in designing and building the character of equipment mentioned, as well as for other special work. The Hunt Company's coal-handling machinery for power stations, boiler-rooms, coaling stations, gas companies, coal yards, shipping docks, factories, etc., is briefly described, aided by accompanying photographs, in the 047 pamphlet. Send for a copy.

Treatise on Intermittent Gears.

Manufacturers who use and engineers who are interested in intermittent gears will find valuable data presented for their consideration and ready reference in the pamphlet entitled "A Treatise on Intermittent Gears." This publication is thorough in its treatment of the subject, and includes new level gear chart, tables of horse-power, tables of weights and other specifications which are always useful to have at hand where one may verify the memory and for other purposes. The book is issued by the Boston Gear Works of Purchase and Pearl streets, Boston, Mass. Write that company regarding obtaining a copy of the publication.

Pneumatic Flue-Welding Machine.

It is with great satisfaction that Messrs. Joseph T. Ryerson & Son of Chicago, New York and Pittsburgh have issued a leaflet entitled "The Path the Calf Made." This presents some interesting facts concerning flue-welding and the use of both hand and machine for that purpose, and serves to direct attention to the Ferguson Flue-Welding Machine. The latter device is earning a fine reputation in shops where the most careful work is done. It is stated that the Ferguson will produce results and weld tubes that

will not have to be tested or cut out of the boiler on account of defective welds. Interested parties should write for the booklet.

For Covering Pipes, etc.

How to reduce expenses and make money is just what most people in business are always trying to discover. In plants where power plants are used one way is to save steam, time, fuel, boilers and pipes, and one of the ways of doing this is by using only such pipe covering as will give the results aimed at. The Southern Pipe Covering Co. of Richmond, Va., offers asbestos-cement sectional covering for high-pressure steam pipes, asbestos-magnesia molded block covering for steam boilers, etc., and other products of a kindred character, which it has supplied in large quantities (to the great satisfaction of buyers) during the past several years. The company is now issuing an illustrated leaflet calling attention to its specialties.

Road Machinery at St. Louis.

Among the many interesting exhibits of a mechanical nature at the St. Louis Exposition is that of Messrs. Julian Scholl & Co. of 126 Liberty street, New York city. The firm invites all who are interested in road-making to visit its exhibit in the Liberal Arts Building, block 1, where may be seen the Scholl line of Universal Steam Road Rollers, Reliance Steel Stone Crushers, elevators, bins, etc. In calling attention to this exhibit Messrs. Scholl & Co. have published and are distributing an illustrated leaflet. Municipal officers, road commissioners and others directly engaged in activity that makes it necessary that they become acquainted with the most modern road-building equipments are especially invited to call at the exhibit, or if not at the exposition, write the company for details regarding its equipments.

Picturesque Florida.

There has been issued a pamphlet containing numerous photographic views of the State of Florida. This work has been designed with a view of conveying to those interested in Florida an idea of the industrial development which has occurred there in recent years, and also seeks to show the class of buildings of a business and manufacturing nature, residences, etc. Among the photographs are scenes in Florida cities, in agricultural districts, in the tobacco-growing sections, in and around the tobacco factories, cotton fields, etc. The pictures have no accompanying text except their titles, but detailed descriptions of the country can be obtained upon application to the Industrial Department of the Seaboard Air Line Railway, offices at Portsmouth, Va., which extends through the Florida territory. The department issues the pamphlet.

Cotton Chats for September.

The September number of "Cotton Chats" will be found to contain the usual interesting quota of information relative to the textile industry, particularly in connection with the introduction of the Northrop loom. When this loom was first offered the manufacturers figured a price that seemed justifiable, based on the increase of a weaver's capacity from 8 to 16 looms. This price has remained practically a standard ever since, though possibly varied slightly at times by changes in cost of raw material, in spite of the fact that the efficiency of the Northrop loom has certainly been increased in many ways. These references will doubtless serve to interest manufacturers who have not heretofore looked into the remarkable results that have been attained by the use of the Northrop. "Cotton Chats" is published by the Draper Company, the world-renowned builder of cotton-mill machinery, Hopedale, Mass.

Automatic Telephone Service.

"What They Say About the Automatic in Grand Rapids" is the title of a booklet issued to present some facts about the successful working of the automatic exchange in Grand Rapids, Mich. The exchange was installed last January with an initial of 5200 stations, all of which (together with the many that have been added since) have been operated to the greatest satisfaction both to the telephone company and its thousands of subscribers. The statements of many of these subscribers are given in the booklet mentioned, besides other interesting facts regarding the automatic exchange, to show what improvements are instituted by its adoption. But it is not only in Grand Rapids that it has been proven, but in independent systems in many cities like Chicago, Columbus, Dayton, Portland, Fall River, Los Angeles, Augusta and many others it is in steady use to-day. The Automatic Electric Co. of Chicago manufactures the automatic service equipment. It has issued the booklet referred to above.

The Barrett Specification—About Roofing.

An illustrated pamphlet called "The Barrett Specification" has been issued for the purpose of placing before architects, engineers and owners of buildings reliable information on the much-discussed subject of roofing. It treats of the various kinds of roofing, their advantages and limitations. It also presents for recognition and consideration the Barrett Specification. Such titles (of the chapters) as "Coal Tar," "Coal-Tar Pitch, Felt and Slag or Gravel Roofing," etc., show the comprehensive character of the booklet's text. The Barrett Specification is furnished, on request, in typewritten form, so that it can be easily incorporated into any building specification, and architects and engineers who desire particulars regarding it are invited to address the Barrett Manufacturing Co., 17 Battery Place, New York city. This company is one of the best-known makers of roofings.

Modern Steel-Plate Construction—Some Interesting Photographs.

All who are engaged in the manufacture of iron and steel will find a series of interesting photographic reproductions in the book issued by the William B. Pollock Company of Youngstown, Ohio. The views show blast-furnace plants erected by the company during the past five years, also cinder and hot-metal cars, metal mixers, etc. A brief introduction is presented with the views. The company has made a great success of steel-plate construction for all purposes, including self-supporting chimneys, riveted pipe, tanks, standpipes, etc., and in the largest and most important steel and iron manufacturing establishments throughout the United States can be seen the specimens of Pollock work, while new contracts are being awarded by the company from time to time not only by old companies, but by new companies, the buyers for both of which are usually exacting engineers of wide experience in the selection of such products.

The Way and How of Roofing.

As the contents of any building are frequently of greater value than the building itself, it is most important that a proper selection shall be made of the best kind of roofing to apply. The roofing question is an important subject, and a short talk on it has been issued under the title of "The Why and How of Roofing." Owners of buildings, architects, building erectors and others are well acquainted with the importance of roofing. But they certainly (very many of them) can learn additional facts by a perusal of the publication above named. Particular stress is made by the booklet on the advantages of using a prepared roofing which is made of pure American wool felt, of uniform quality and strength, the raw felt being saturated in pure straight-run American coal tar, and dried by artificial means. Various other operations are also performed to make this roofing waterproof and weatherproof. Copies of the booklet are being distributed to the trade by the Chatfield & Woods Company of Cincinnati, Ohio.

Metals.

Buyers of metals will find one of the most complete lines illustrated and listed in Catalogue No. 35 of Messrs. Patterson, Gottfried & Hunter. It may be mentioned that the metals include brass and bronze in various sizes, styles, qualities and gauges for various purposes; also plain and ornamental brass, wire rods, drawn moldings and solid shapes, tubing, phosphor-bronze, german-silver wire, electrical copper wire, platinum wire, Jessop's English tool steel, American tool steel, crucible spring steel, sheet iron of all kinds, perforated brass, tin and copper, expanded metals, etc. Probably no dealer can show a more complete stock of metals. Those who are buyers of such products will find it greatly to their advantage to have a Patterson, Gottfried & Hunter catalogue at hand when contracts, whether small or large, are to be awarded. Write to the company's offices at Center and Walter streets, New York city. A complete stock of hardware, factory and mill supplies and power-transmission appliances is also kept on hand.

The Use of the Slide Rule.

A publication that will find ready recognition is "The Use of the Slide Rule," by F. A. Halsey, associate editor of the American Machinist. This is the third edition, corrected. The book is mainly a reprint of a series of articles which originally appeared in the American Machinist. It is to be taken as an instruction book rather than as a treatise. The engravings (for the first time, it is believed, in any similar publication) are true reproductions of the instrument, and show it properly set for solving the various problems. Such real difficulties as the slide rule

offers to the learner are carefully pointed out, and the best methods of overcoming them are given, and this, together with the warning against too rapid progress and the pitfalls of slide-rule gymnastics, will, it is hoped, do something to promote the use of the most valuable labor-saver within the reach of the average constructing engineer. The book is vestpocket size, bound in pasteboard, and can be obtained for 50 cents from the publishers, the D. Van Nostrand Company, 23 Murray street, New York.

Direct-Current Turbine Dynamos.

The De Laval Steam Turbines find their widest field in driving electrical machinery, although they are well adapted for almost all classes of work where other steam motors are used. In Bulletin No. 2 the De Laval Steam Turbine Co. presents facts, figures and illustrations of direct-current turbine dynamos from 7 to 300 horsepower. There is no uncertainty as to the turbine generator fitting together in the proper manner, as the entire unit is assembled in the shop and operated before being shipped. Purchasers are also at liberty to make any tests desired before shipment, thereby removing any uncertainty as to the efficiency after installation. Each unit is absolutely self-contained, free from vibration, and occupies an exceedingly small space. There are few parts to get out of order, no valves to set, no stuffing-boxes to be attended to, no bearings to adjust, no cylinder oil to be used, and, in fact, the machine approaches perfection as a generating set. By writing the executive officers of the company at 74 Cortlandt street, New York, copies of the bulletin can be obtained.

"Center-Crank" Air Compressors.

The ever-extending use of compressed air makes it desirable that the purchaser not only has a wide variety of sizes to select from, but may be able to procure a machine driven by the means of power most available. Keeping these facts in view, the Herron & Bury Manufacturing Co. of Erie, Pa., designed and manufactures the "Center Crank" Air Compressor, details regarding which are presented in the company's Bulletin No. 24. The compressors referred to are steam-belt and motor driven, the regular types being illustrated and described, while the company also states that it expects to put on the market soon a line of compressors driven direct from gas, gasoline and oil engines. Being specialists in this class of machinery, the company's entire time is devoted to the development of compressors. With its wide knowledge and experience, the company feels that it can furnish machines not only to meet the needs of the present, but anticipate, in a measure, the future. Those users of compressed air who want to be further informed regarding Herron & Bury's products are invited to write the company.

"A B C" Engines.

Illustrated pamphlets Nos. 162, 163 and 164 contain, respectively, full information concerning the "A B C" vertical engines, type F, the vertical types B and C, and the horizontal type I. Type F is self-contained, complete within itself on one base. It is especially designed for quick motion, and has all the elements necessary for endurance at the highest speed. The frame is rigid, the parts ample, the lubrication best. Its large bearings and wearing surfaces and the general simplicity throughout adapt it to long and continuous runs under heavy loads, with a minimum of care. Type B is of the vertical open-frame or "Marine" type. It is of extra heavy construction throughout, designed especially to meet the requirements where continuous and faultless operation is absolutely necessary. Type I (the horizontal) is designed for blower work. It is made extra heavy throughout, enabling it to endure the severest strain. These engines are the product of the well-known American Blower Co. of Detroit, Mich., famous for its "A B C" heating, ventilating, drying, mechanical-draft apparatus and other mechanical equipment. Catalogues are sent to applicants.

Steel Ceilings.

In issuing its large illustrated catalogue of steel ceilings the St. Paul Roofing, Corning & Ornament Co. does not deem it necessary to present any argument detailing the advantages of such ceilings. Steel ceilings, as a substitute for wood or plaster, have won their way by genuine merit. For durability, beauty and elegance, not to speak of their fireproof qualities, the modern steel ceilings as manufactured by the St. Paul Company are in extensive demand all over this country. In manufacturing the company has taken the ideas of the most noted artists and wrought them out in steel, so that the ceilings are models of outline, sharp, bold or moderate in relief, and scientifically

accurate. The present catalogue refers to both slip or lap-joint ceilings, and presents many views of different designs, enabling prospective buyers to intelligently make selections and acquaint themselves with the varied line offered. The St. Paul Roofing, Cornice & Ornament Co. is of St. Paul, Minn., where it operates an extensive plant for making all kinds of sheet-metal architectural work in steel, zinc or copper, also makes eaves trough, conductor pipe, skylights, windows, doors, roofings, sidings, etc. Write for copy of this latest catalogue.

New Model Comptometer.

Those business men who are acquainted with the perfection attained in the previous models of the Duplex Comptometer will need no urging to investigate the latest model, now being offered by the manufacturer. The new model is the culmination of 16 years' continuous success in the manufacture and introduction of calculating machines by pioneers in the art of mechanical arithmetic. It is so constructed that the operator may strike at one time as many keys in separate columns as are convenient. By a single stroke such amounts as \$1.55, \$13.40, etc., can be added. The key stroke is an extremely light touch, but it is the natural perpendicular stroke, in which the weight of the hand does most of the work. The advantages of the Duplex Comptometer may be summarized as noiseless operation, uniform key action, straight stroke, dustproof, longest touch, durability, reliability and practicability. The Felt & Tarrant Manufacturing Co., 52 Illinois street, Chicago, manufactures the Duplex Comptometer, and is just now distributing an illustrated leaflet calling attention to the new model. Visitors to the exposition at St. Louis can see the machine in actual use at the company's exhibit, block 13, Liberal Arts Building.

Airbrake Tests.

All development of arts, mechanics and objects of utility have grown out of the necessity for appliances designed to accomplish some particular purpose. The growth of car-braking has been such a development. When one considers the period during which the airbrake has been developed, it is found that this is a comparatively recent improvement. Notwithstanding the necessity for brakes in past centuries, it seems that the first suggestion of this necessity was made not more than 25 years ago. In 1869 the Westinghouse airbrake was first introduced, and since then it has from time to time undergone improvement, until today it is in general use throughout the civilized world. The growth of car-braking comprises an interesting history in the form of an introduction to a book entitled "Airbrake Tests," which has been compiled and published by the Westinghouse Airbrake Co. in connection with its exhibit of braking appliances at the Louisiana Purchase Exposition. The book's primary purpose is to present in a comprehensive way, and at the same time in condensed form, the data that has resulted from the most significant and valuable tests of braking apparatus made under such conditions as are found in actual service. The data will be found of exceeding interest and of real value to engineers, car users and others. The book itself is a clothbound volume of some 320 pages, and its contents include illustrations that are pertinent to the subject in reference, as well as tables and diagrams elucidating and summarizing the results of the tests detailed. The Westinghouse Airbrake Co. of Pittsburgh, Pa., is distributing the book.

New Orleans and the Canal.

Major B. M. Harrod, the New Orleans member of the Panama Canal Commission, is of the opinion that New Orleans should benefit immensely through shipments of material for the construction of the canal. He says:

"If New Orleans is alert and awake to her opportunities, and if there are enough ships plying between New Orleans and those ports, I see no reason why almost everything that enters into the construction of the canal should not go through this port. The facilities of the port must be advertised, however, and an effort made to secure the business. Coal, machinery, flour, lumber, almost everything we will need can be found in the Mississippi valley, and as New Orleans is along the line of least resistance, all these supplies would naturally go that way. Everything that enters into the construction of the canal can go through New Orleans if opportunity is offered."

FINANCIAL NEWS

Review of the Baltimore Market.

Office Manufacturers' Record,
Baltimore, Md., September 28.

The Baltimore stock market has generally manifested more strength during the last week than it has shown for some time. The income bonds of the United Railways & Electric Co. and the common stock of the Atlantic Coast Line were conspicuous for advances, although United Railways common, the 4 per cent. bonds of the same company, Consolidated Gas and Seaboard shares also participated noticeably in the improvement. The rise in United Railways incomes was due particularly to the outlook for the company. Bank and trust-company shares and the entire list of investment securities exhibited a better feeling.

In the trading United Railways common sold from 7½ up to 9, reacting to 8½; the income bonds from 44½ to 48½, with last sale at 48; the 4 per cents from 90½ to 91½; United Light & Power preferred, 40; the 4½s from 95 to 95½; Consolidated Gas between 79 and 81; the 6s at 111; the 5s at 114½; Seaboard common from 14½ to 16½; the preferred from 29½ to 32½; the 4 per cents at 82½ to 82½; the 10-year 5s at 102½ and 103; the 3-year 5s at 95½ to 96; Cotton Duck 5s at 64½ to 65; G.-B.-S. common at 6; the incomes, 23½ to 25; the 1sts, 51½ to 52½.

Bank stocks sold as follows: Citizens', 27; Farmers and Merchants' 58½; Bank of Baltimore, 120; Mechanics', 29½. Central Trust sold at 50; United States Fidelity, 101½ and 102; Fidelity & Deposit, 141 and 140; International Trust, 93½ and 92.

Other securities traded in were as follows: Atlantic Coast Line common, 129 to 137; do. Consolidated 4s, 98 to 98½; do. stock of Connecticut, 280 to 290; Northern Central stock, 90½ to 96½, last sale at 95½; Georgia Pacific 6s, 123; Coal & Iron Railway 5s, 105½ to 105½; Anacostia & Potomac 5s, 102½ to 104½; Raleigh & Augusta 6s, 123½; Georgia Southern & Florida 1st preferred, 97; Virginia Century, 96½ to 96½; Baltimore City 5s, 1916, 118½ and 119; do. 3½s, 1940, 111½; Georgia & Alabama Consolidated 5s, 108½; Northern Central 5s, A, 120½; City & Suburban 5s (D. C.), 101½ to 102½; North Baltimore 5s, 120½ to 120½; Norfolk Railway & Light 5s, 86; Maryland Telephone 5s, 88½; Norfolk Railway & Light stock, 10; Georgia, Carolina & Northern 5s, 111; West Virginia Central 6s, 112½; Virginia Midland 2ds, 111½; Western Maryland new 4s, 86½; Florida Southern 4s, 95 to 95½; Maryland & Pennsylvania 4s, 88½; Maryland Club 4½s, 102½; Virginia Electric & Development 5s, 94; Seaboard & Roanoke 5s, 110½; Baltimore & Ohio common, 89½; Alabama Consolidated Coal & Iron common, 11 to 13½; do. 5s, 70; Newport News & Old Point 5s, 95 to 97½; Merchants & Miners' Transportation Co., 170.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended September 28, 1904.

	Par.	Bld.	Asked.
Railroad Stocks.			
Georgia Southern & Florida.....	100	25	
Georgia Sou. & Fla. 1st Pref.....	100	97	100
Georgia Sou. & Fla. 2d Pref.....	100	65	67½
United Railways & Elec. Co....	50	8½	8¾
Seaboard Railway Common.....	100	15½	16
Seaboard Railway Preferred.....	100	32½	32
Knoxville Traction.....	100	30	30
Norfolk Railway Light.....	25	10	10½
Atlantic Coast Line.....	100	137½	139
Atlantic Coast Line of Conn.....	100	294	297
Bank Stocks.			
Citizens' National Bank.....	10	27	27½
Commercial & Far. Nat. Bank.....	100	100	
Farmers & Mer. Nat. Bank.....	40	58	60
First National Bank.....	100	123	125
National Bank of Baltimore.....	100	122½	123
National Howard Bank.....	10	10½	12
National Marine Bank.....	30	34	34
National Mechanics' Bank.....	10	20	20
National Union Bank of Md.....	100	117	119
Second National Bank.....	100	182	184
Western National Bank.....	20	35½	40

Trust, Fidelity and Casualty Stocks.

Baltimore Trust & Guarantee.....	100	238	247½
Central Real Estate & Trust.....	50	48	50
Continental Trust.....	100	104	110
Fidelity & Deposit.....	50	140	142
International Trust.....	100	90	94
Maryland Casualty.....	25	...	50
Mercantile Trust & Deposit.....	50	140	149½
Union Trust.....	50	57	49
U. S. Fidelity & Guaranty.....	100	102	102½

Miscellaneous Stocks.

G. B. & S. Brewing Co.....	100	5%	6
United Elec. L. & P. Pref.....	50	36½	40
Cotton Duck Voting Trust.....	100	24	3
Consolidation Coal.....	100	66	68½
George's Creek Coal.....	100	74	75
Consolidated Gas.....	100	80	80½

Railroad Bonds.

Albany & Northern 5s.....	92½	...	...
Atlanta & Charlotte 1st 7s, 1907.....	110	...	...
Atlantic Coast Line Con. 4s.....	98	98½	...
Carolina Central 4s.....	96	97	...
Char. Col. & Aug. 1st 5s, 1910.....	116	...	...
Char. Col. & Aug. 2d 5s, 1910.....	106	...	...
Coal & Iron Railway 5s.....	105½	106½	...
Columbia & Greenville 1st 6s, 1916.....	116½	...	...
Georgia, Ctr. & North 1st 5s, 1929.....	111	111½	...
Georgia South & Fla. 1st 5s, 1945.....	114½	115½	...
Georgia Pacific 1st 6s, 1923.....	122	124	...
Piedmont & Cum. 1st 5s, 1911.....	106	...	...
Raleigh & Augusta 1st 6s, 1926.....	122	124	...
Richmond & Danville Gold 6s, 1915.....	114½	115	...
Savannah, Fla. & West. 5s, 1934.....	112	...	...
Seaboard & Roanoke 6s, 1916.....	100	...	...
Seaboard & Roanoke 5s, 1936.....	110	111½	...
Virginia Midland 2d 6s, 1911.....	111	112	...
Virginia Midland 3d 6s, 1916.....	114	...	...
Virginia Midland 4th 3-4s, 1921.....	110	...	...
Virginia Midland 5th 5s, 1926.....	112	...	...
West. North Carolina Con. 6s, 1914.....	115½	...	...
West Virginia Central 1st 6s, 1911.....	112½	113	...
Wilmington & Wel. Gold 5s, 1935.....	118	...	...
Charleston Con. Electric 5s, 1909.....	88	88	...
Knoxville Traction 1st 5s, 1928.....	102	105	...
Newport News & Old Pt. 5s, 1938.....	96	100	...
Norfolk Street Railway 5s, 1944.....	105	...	...
United Railways 1st 4s, 1949.....	91½	91½	...
United Railways Inc. 4s, 1949.....	47½	48	...
Seaboard 4s.....	82½	83	...
Seaboard 10-year 5s.....	103	103½	...
Seaboard 3-year 5s.....	95½	96	...
Lexington Railway 1st 5s.....	101½	...	...
Macon Railway & Light 5s.....	88½	90	...
Richmond Traction 5s.....	103	...	...
Norfolk Railway & Electric 5s.....	101	...	...
Norfolk Railway & Light 5s.....	85½	87	...
Florida Southern 4s.....	108½	108½	...
Georgia & Alabama Terminal 5s.....	100	100	...
Western Maryland 4s.....	85%	86%	...

Miscellaneous Bonds.

Mt. V. & Woodly Co. Duck. 5s.....	65½	67
Mt. V. & Woodly Co. Duck. Inc. 12	12	16½
G. B. & S. Brewing 1st 3-4s.....	52	53
G. B. & S. Brewing 2d Income.....	25½	26
United Elec. Light & Power 4½s.....	95%	...
Consolidated Gas 6s, 1910.....	110	111
Consolidated Gas 5s, 1939.....	114½	116

SOUTHERN COTTON-MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending September 27.

	Bld.	Asked.
Abbeville Cotton Mills (S. C.).....	60	71
Aiken Mfg. Co. (S. C.).....	85	90
Anderson Cotton Mills (S. C.).....	115	...
Arkwright Mills (S. C.).....	105	...
Augusta Factory (S. C.).....	72	75
Belfton Mills (S. C.).....	50	50
Brandon Mills (S. C.).....	100	...
Buffalo Cotton Mills (S. C.).....	92½	...
Buffalo Cotton Mills (S. C.) Pfd.	95	96
Chadwick Mfg. Co. (N. C.).....	122½	...
Chilquola Mfg. Co. (S. C.).....	102	...
Clifton Mfg. Co. (S. C.).....	90	95
Clinton Cotton Mills (S. C.).....	135	...
Courtenay Mfg. Co. (S. C.).....	109	111
Columbus Mfg. Co. (Ga.).....	88	...
Dallas Mfg. Co. (Ala.).....	79	85
Darlington Mfg. Co. (S. C.).....	76	92
Eagle & Phenix Mills (Ga.).....	107	111
Easley Cotton Mills (S. C.).....	101	...
Enoree Mfg. Co. (S. C.) Pfd.	77	83
Enterprise Mfg. Co. (Ga.).....	76	80
Exposition Cotton Mills (Ga.).....	160	200
Gaffney Mfg. Co. (S. C.).....	60	63
Gainesville Cotton Mills (Ga.).....	70	70
Graniteville Mfg. Co. (S. C.).....	115	...
Greenwood Cotton Mills (S. C.).....	100	...
Grendel Mills (S. C.).....	90½	101
Henrietta Mills (N. C.).....	190	200
King Mfg. Co. John P. (Ga.).....	88	90
Lancaster Cotton Mills (S. C.).....	100	110
Lancaster Cot. Mills (S. C.) Pfd.	100	...
Layne Mfg. Co. (S. C.).....	92	98
Laurens Cotton Mills (S. C.).....	107	...
Milledge Mills (S. C.).....	95	...
Limestone Mills (S. C.).....	95	...
Lockhart Mills (S. C.).....	95	...
Louise Mills (N. C.).....	98	98
Louise Mills (N. C.) Pfd.	103	...
Marlboro Cotton Mills (S. C.).....	70	87½
Mills Mfg. Co. (S. C.).....	95	...
Mills Mfg. Co. (S. C.) Pfd.	100	...
Monaghan Mills (S. C.).....	79	85
Newberry Cotton Mills (S. C.).....	98	100
Norris Cotton Mills (S. C.).....	104	...
Orr Cotton Mills (S. C.).....	99½	100%
Pacolet Mfg. Co. (S. C.) Pfd.	96	100½
Palozer Mfg. Co. (S. C.) Pfd.	172	...
Piedmont Mfg. Co. (S. C.).....	179	181
Poe Mfg. Co. (S. C.).....	129	133
Raleigh Cotton Mills (N. C.).....	106	...
Roxboro Mills (N. C.).....	102	103
Saxon Mills (S. C.).....	100	103
Sibley Mfg. Co. (Ga		

